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## ELEMENTS OF METALLURGY;

A PRACTICAL TREATISE ON THE ART OF EXTRACTING METALS FROM THEIR ORES.

By J. ARTHUR PHILLIPS, M. Inst. C.E., F.G.S., F.C.S., &c.,

Ancien Elève de l'Ecole des Mines, Paris; Author of "Mining and Metallurgy of Gold and Silver," &c.

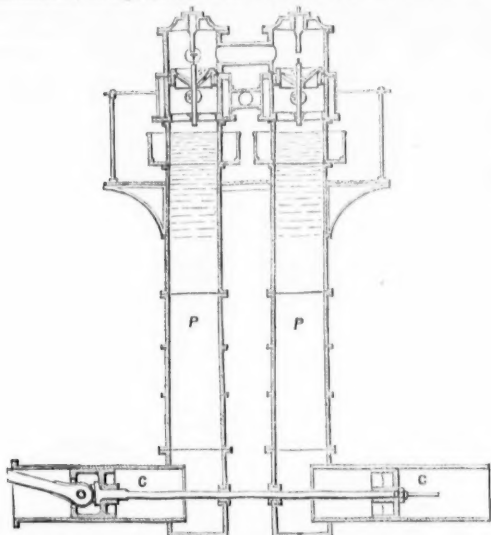
"The statistics and analyses here given represent both labour and time which it is difficult to estimate. \* \* The work will be eagerly sought for by Students in Science and Art, as well as by practical Workers in Metals."—*Colliery Guardian*.

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### Original Correspondence.

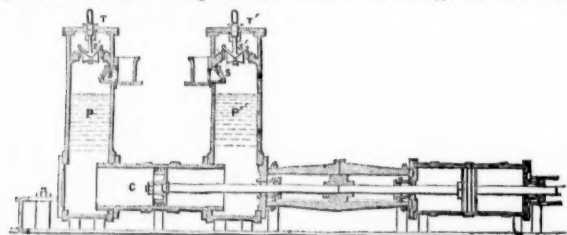
#### PILGRIMAGE TO ST. GOTHARD—No. III.

The improvements introduced in the construction of the air compressors are even greater than those which have been made in the rock-drills; and as we were fortunate enough to obtain tracings of some of the principal modifications, their relative advantages can be more readily shown. The first diagram represents the Mont Cenis (Bardonnèche) compressor. At Bardonnèche there were seven build-



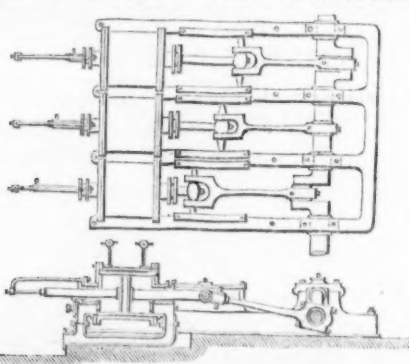
C, are the cylinders filled with water, wherein the pistons move; P, P, are the vertical chambers; S, S, are the inlet valves communicating with the external air; F, F, are the escape valves through which the compressed air passes; and T, is the tub through which the compressed air is conveyed for use.

ings and seven water-wheels, driving 23 pumps; each building was 17 metres long and 17 metres wide, giving a surface of 289 square metres for each building, or 2023 square metres for the whole. As to the volume of air aspired per minute, we find that one cylinder at each stroke (maximum stroke 150 m.) drew 424 litres of air, so that seven revolutions per minute gave 2968 litres, or for the four pumps connected in a group 11,872 litres of air per minute; therefore, with the seven groups of 28 pumps which were used, 83,104 litres of air were compressed. In each pair of pump cylinders 1850 litres of water were contained and put in motion each time the air was taken in. The weight of the water and moving parts of the machine put in motion at each stroke was 2000 kilos, at Bardonnèche, and 2800 kilos, at Modane. The Serravallo system, as applied at Airolo, and represented in the second diagram, shows im-



portant progress in point of simplicity, though but little increased efficiency as compared with the Bardonnèche compressors. The building, which contains two double cylinder pumps, is 15½ metres long and 14½ metres wide, and thus occupies an area of 224.75 square metres. The extent of the stroke is 1.20 metres, and at each stroke 180 litres of air is taken in. The normal speed, and when this is increased the useful effect is considerably diminished, is 14½ revolutions per minute, giving 2610 litres of air, or 10,440 litres of air per minute for the four air cylinders included in the group. In this arrangement the quantity of water contained in the pump and put in motion at each stroke is 560 litres, and the temperature of the compressed air at 5 atmospheres, effective, is from 30° to 34° centigrade. For each 300 litres of air compressed 1 litre of water is introduced, and the two compressor cylinders take in nearly 5½ cubic metres of air per minute, or 10½ cubic metres for the four cylinders coupled to the same fly-wheel.

But the high speed of working which has been attained by Mr. Favre in the driving of the St. Gothard Tunnel would, probably, never have been reached but for his adoption of the improved compressor of Prof. Colladon, represented in the subjoined diagram, and which is now in used both at Goeschenen and at Airolo. At



the latter place the building for containing four turbines and twelve pumps is 32.80 metres long and 9.20 metres wide, and, therefore,

occupies an area of 301.76 square metres. Each half-stroke of the piston comprises 71 litres of air. As a speed of 85 revolutions per minute is maintained, there are 170 half-strokes per minute, giving 12,070 litres of air, or 36,210 litres of air per minute, for the group of these cylinders, so that with the four groups, which occupy but one-third more space than the Serravallo apparatus, and consume considerably less power, the quantity of air compressed is 144,840 litres per minute, instead of 10,440 litres. The weight of each group of three pumps, with accessories complete (frames, shafts, tubes, &c.), is but 9500 kilos, or 9½ tons. The water injected is 1 litre for each 1000 litres of air compressed, and the temperature of the compressed air at 6 atmospheres effective is from 34° to 35° centigrade. Each group of three cylinders compress 36½ cubic metres of air per minute.

In taking leave of the tunnel a few words may not be out of place as to the system of driving. The opinion is expressed by many practical men that it is a mistake to have the leading heading under the crown instead of on the floor of the tunnel, and at first sight there certainly appear to be grounds for this objection; yet upon mature consideration it will be seen that the St. Gothard system has so many and important advantages as fully to justify Mr. Favre in adopting it. He is much pressed for time, having undertaken to complete the tunnel so quickly that many are of opinion that he is sure to lose by his contract, because the completion is impracticable. We have more confidence in Mr. Favre's sagacity, and believe that ere long he will find it practicable to work three faces at each end by machine-drills, and that even 6 metres per day in the advance heading will be exceeded. With the leading heading on the floor of the tunnel only one set of machine-drills can be worked to the best advantage, but at the present time with the St. Gothard system it is easy to have three, and we shall shortly find Mr. Favre using machine drills not only in the places A and B shown in the small diagram in last week's Journal, but for the removal of the portion D also. All that is required to permit of the advantageous application of this arrangement is strict discipline, and this already exists to such an extent at the St. Gothard Tunnel that there is absolutely no difficulty in the matter. Mr. Favre has already proved that he can attain a speed which all previous engineers have regarded as impracticable, and we do not hesitate to predict that he will complete the tunnel so well and rapidly as to secure for himself the foremost position among railway engineers of modern times.

#### NEW SYSTEM OF MINING—THE DIAMOND ROCK DRILL.

The large extent to which the uncertainties connected with mining enterprises are diminished by judicious preliminary explorations by boring is now very generally recognised, and although the diamond rock drill is acknowledged to be far in advance of all other contrivances for this purpose, it will not be uninteresting to enquire into the nature of the work which has been done with it, and the average rate of speed attained. We may say at once that we do not regard the diamond drill, and the various forms of percussive drills, as competitors with each other, but consider the former to possess a field of its own, owing to the facility with which in exploratory operations it can be used to ascertain, by the actual examination of the cores brought to surface, the exact character of the rocks passed through, and to the applicability of the diamond drilling system, and that only, to the boring of holes hundreds of feet deep, without appreciable loss of power or increased inconvenience. The machinery required for running the drill is excessively simple, for really all that is necessary is to give the cylinder which carries the diamonds a rotation at the rate of about 250 revolutions per minute, at which speed it is found that the maximum of work is done in proportion to the power employed. The boring rods are hollow, and on the top end of the series is placed a water union, joined up to a force pump by means of flexible hose and wrought-iron pipes. The force pump being driven, by suitable gearing, on the lower end of the rods is placed the crown, which is merely a piece of steel tube, thus set with carbide (or diamonds in an uncrystallised state):—Holes are first bored in the end of the crown, of a size a little less than the diamonds to be inserted, and then cut exactly to the shape of the piece of diamond, which is then placed in the hole, and the metal of the crown drawn round it on every side by means of a punch, leaving only a very small portion of the stone projecting beyond the surface of the crown. Hollows are then cut between the stones, to allow the water to pass freely while the crown is at work; the water answering the double purpose of keeping the crown cool while boring and washing the debris resulting from the boring to the surface of the ground.

The working of the diamond drill, especially in hard rock, which by other systems would be almost impenetrable, is most satisfactory, and probably the best evidence of the value of the drill which can be furnished is that afforded by a reference to the progress made in some of the bore-holes at present being put down. In the Darlington district a boring was commenced in ironstone on Aug. 3, and the depth of 495 ft. had been reached by Oct. 3. Another hole, in boulders and clay, on Dec. 13, and 510 ft. was reached by Oct. 3. In this case considerable difficulty was surmounted, owing to the softness of the ground and the difficulty in getting in the lining tubes, the result being that for six months the hole was entirely still. They are now just through the difficult ground, and will go on more rapidly. On March 31 a hole was commenced, in which they came upon, perhaps, 100 ft. of ground consisting of hard and soft ground alternately, and very difficult to deal with, as it was necessary to re-bore and line the hole, yet by Oct. 3 a depth of 566 ft. had been reached. A hole commenced on Feb. 2 was down 1033 ft., although they were stopped two months getting out old tubes, so as to re-bore the hole, and guard against falling in. A boring for salt, commenced on April 15, went through 1023 ft. of marl and sandstone by Oct. 3. By the same date a boring in the ordinary coal measures, commenced on Feb. 9, was down 1264 ft. A 7-in. hole, commenced on Aug. 24, in red sandstone and marl, was down 105 ft. by Oct. 3, although there had been several days stoppage through the breaking down of the machinery. Another hole, commenced on June 10, 1873, was completed to a depth of 1014 ft. by July 18, 1874, although great difficulty was encountered through the alternations of hard and soft material, and the large quantity of lining tubes that had to be put down. Almost innumerable other examples of the same kind might be referred to, but these will suffice, since they show that even under the most unfavourable circumstances 169 fms. can be sunk in 13 months, or at the rate of 13 fms. per month on the average; and that where the rock is hard and favourable, such as sandstone and marl, as much as 150 fms. can be got through in 12 weeks, or at the rate of nearly 13 fms. per

week, a hole commenced on July 19 in sandstone and marl having reached 900 ft. by Oct. 3. It will, of course, be understood that in these cases the object has merely been to put down the bore-hole and bring up the required specimens of the strata, and that there has been no debris to be moved, as would be the case in ordinary mining, but the nature and the value of the rocks will have been cheaply and expeditiously ascertained, and those concerned will have been given the means of determining whether or not their contemplated mining operations are likely to prove remunerative.

In developing his invention Major Beaumont has ascertained some very interesting facts with regard to the hardness of gems, and thus been enabled to remove some erroneous notions which previously prevailed. It will be recollected that the diamonds used in the drill are not the gems but the cheap form of the mineral carbonate, which not long since was quite unsaleable, and was then applied only for the cutting of other diamonds. Large quantities of it are obtained from Brazil, and Major Beaumont anticipates that although none has yet been found in the Cape diamond field it will probably be met with wherever the diamond is found. He suggests that the carbonate is a very imperfectly crystallised diamond, and that it is this which gives it its special value for his purpose, as it has no, or next to no, cleavage, and consequently does not split up and break in the way that a jewel diamond, or a piece of boart, would do; he regards boart as standing half way between the jewel diamond and carbonate. Taking the tables of hardness given by acknowledged authorities, Major Beaumont found the hardness of diamonds from Ormus stated at 20, whilst coloured diamonds were marked 19; rubies and sapphires, 17 to 16; topaz, 15 to 14; emerald, garnet, agate, and onyx, 12; and quartz, 10. And there being plenty of corundum or rubies and sapphire in the markets at merely nominal prices, as compared with carbonate, it naturally suggested itself to him that if he could replace diamond by corundum the commercial advantage would be considerable. But experiments soon dispelled all allusions, by proving to him that the accepted tables both for sapphires and corundum were altogether erroneous. He set a piece of carbonate in a suitable holder, and held it against a grindstone; the carbonate turned the grindstone down. On trying the same experiment with the other minerals the grindstone turned them down, from which he concluded that the diamond stands in point of hardness, or resistance to abrasion (if the two be not synonymous terms), enormously in advance of any other known material in nature. It would have been still more interesting to learn whether in the test with corundum Major Beaumont was careful to ascertain if the corundum has hard and soft corners, such as diamonds are known to have, as it might then have been determined whether by judicious setting of corundum cutters there are any circumstances under which the mineral might be used for boring purposes, not perhaps as a substitute for the carbonate, but where the extreme hardness of the carbonate can be dispensed with.

The mechanical details of the diamond drill were given in a paper read by Mr. J. Ker Gulland before the Midland Institute of Mining Engineers, a few months since, and fully referred to in the Journal at the time, and the testimonials which the Diamond Rock Boring Company have received have been very numerous, and highly encouraging; it will, however, suffice to refer to two or three of the most recent. The Rev. Dixon Brown, of Unthank Hall (Oct. 1), writes that "a great depth has been bored in, comparatively, a very short time: a perfect section of the various strata has been brought up in the core, and the position and thickness of the seams of coal that have been reached he has every reason to believe have been accurately given." Mr. Bouch, of Shildon (Oct. 2), states that the machine "has got over difficulties in their case which could not be accomplished by any other boring apparatus that I am acquainted with." and Messrs. Giers, Mills, and Co., of the Ayresome Ironworks, Middlesborough (Oct. 2), state that they "are perfectly satisfied with the result of the two bore-holes you put down for us at Coldside and Thornton Hall, the latter hole being being put down to 528 ft. in about eight weeks. By no other method of boring could we have got such perfect and tangible record of the strata we went through. We are satisfied that the minor defects the machine still has to contend with are far outweighed by this one consideration—that you are able plainly to see with your own eyes the exact state of the strata you are passing through." The actual cost of sinking with the diamond drill is found in practice to be as nearly as possible the same as with hand labour, but the saving in time is enormous, resulting, of course, in a large saving in fixed charges of every kind, so that in the case of the Philadelphia and Reading Coal and Iron Company's pits, which are to be 1500 ft. deep, one being 15 ft. 8 in. by 13 ft. 6 in., and the other 21 ft. 8 in. by 13 ft. 6 in., it is believed the cost will not exceed 30s. per fathom. Each drill will make 6 fms. of hole per day of 24 hours, and in the shaft just mentioned there are five drills, each making five holes, so that 25 holes are put in in the area of each shaft. Upon an average the diamonds require re-setting, so as to present a fresh grinding surface, after from 250 to 300 ft. of rock has been bored through. The Diamond Rock Boring Company in this country undertake the work themselves, and put down bore-holes at the price of 8s. per foot for the first 100 ft., 10s. per foot for the second, 11s. 4s. for the third, and so on increasing 8s. per foot for each additional 100, until at the depth of 1500 ft. the price becomes 6s. per foot; beyond that depth special rates are charged.

Such evidence as this leaves no doubt as to the efficiency of the diamond drill for deep boring, and establishes the importance of the invention, not only for facilitating exploratory operations, but also for aiding the new American system of shaft sinking, recently described in the Journal, and certainly calculated very materially to ensure the utmost economy, and prevent any unnecessary delay in bringing mining operations into profitable working condition.

#### ON MECHANICAL PUDDLING.

The first meeting of the Society of Engineers for the Session 1874-5 was held on Monday evening in the Society's Hall in Westminster. Upon taking the chair the president, Mr. W. MACGREGOR, congratulated the members on the success which had attended the visits made during the vacation to engineering and other works. After the nomination of new members and associates and other routine business, a paper was read by Mr. PERRY F. NURSEY—"On Mechanical Puddling." The author gave a complete history of the rise and practical progress of mechanical puddling, the various machines being illustrated by diagrams, and the results of practice represented by samples of products. He first described the ordinary process of hand puddling as given to the world by Cort in 1784, and still generally practised, referring next to various attempts to relieve the puddler in the summer part of his work by means of steam-worked rables, such as that of M. Dormuy and the Joe Pickles steam-puddler in use by the Kirkstall Forge Company. The first to design a revolving puddling-machine were Messrs. B. P. Walker and J. Warren, who in 1853 proposed a circular fire-brick chamber, cased with iron and rotating on its horizontal axis. Messrs. Walker and Warren did not, however, carry their invention into practice, but they were followed by Mr. W. H. Tooth, in conjunction with Mr. W. Yates, who endeavoured to work out their design to a practical issue. Mr. Tooth's invention was taken up by Mr. W. Meneham, who erected revolving puddling-furnaces at the Dowling Ironworks, and endeavoured by all possible means to make the system successful. He very nearly did so, but was defeated in the end by the failure of the furnace, which he could not get to stand. Mr. E. Williams, of Middlesborough, however, experimented in the same direction, and found that he overcame the instability of the lining by melting cinder and scale from the shingling hammer together, and pouring them while liquid into the chamber of the revolving puddler.

In America Mr. S. Danks introduced a mechanical puddling-furnace, which was extensively adopted there, and attracted considerable attention in England, where, after careful experiment, it had been adopted at several works. It had not, however, yet proved a commercial success in England, and had been abandoned at several works. At others, notably those of Mr. R. Heath, M.P., in Staffordshire, and at the Erismu Works, Middlesborough, hopes were still entertained that the process would prove satisfactory in a



commercial sense, and every endeavour was being used to bring about the desired result. In America, also, the author stated the Danks furnace had not proved altogether successful, the system having been abandoned by General Wilder at Chattanooga. Mr. Spencer's attempts to solve the question of mechanical puddling at West Hartlepool were favourably noticed, as were also those of Mr. Sellers, in the United States, although neither had yet proved commercially successful, which, proof, the author observed, demanded that an invention should be as capable of universal application as was the ordinary puddling system. The Siemens rotative furnace, as adapted by Sir John Alcock at the Buttery Works for mechanical puddling, was stated by the author to be at present under probation, no absolute and reliable result having yet been attained. Mr. Crampton's powdered fuel rotary puddling-furnace was next described at length by Mr. Nursey, and the results of its successful working in the Royal Arsenal, Woolwich, were stated and were exemplified by a series of samples of iron and steel of exceptionally high quality. The author stated that Crampton furnaces were replacing the Danks furnaces at one establishment in England, where they had been in use, and that at the Carlton Ironworks and those of Messrs. Fox, Head, and Co., a number of Crampton furnaces were being erected, and would soon be in operation. The author finally reviewed the whole subject, his conclusions being that at present not one system of mechanical puddling had absolutely satisfied the conditions demanded of commercial success. There still remained some hope for Mr. Danks, but under improved mechanical conditions. It was probable, too, that Mr. Sellers might prove his machine a success. Mr. Crampton, however, appeared to have the first chance, for not only had he demonstrated that the best results were obtainable in continuous working from his furnace, but that those results were attained with coal dust, an article which in itself was comparatively worthless, and the use of which would greatly conduce to the economy of the Crampton system.

**ECONOMICS OF GAS—THE SILBER LIGHT.**—The improvements in lamps introduced by Mr. A. M. Silber formed the subject of a lecture by Prof. E. V. Gardner, which for a considerable time attracted large audiences to the Royal Polytechnic, and on Thursday evening the Professor delivered for the first time an entirely new and important lecture upon a cognate subject—the Economics of Gas: the New Silber Gas Burner. Prof. Gardner ably narrated the origin and birth of coal gas, and the early attempts at gas making. After describing the ordinary forms of gas burners, he pointed out the importance of the oxygen supply, and paid a well-merited compliment to the genius and ingenuity of Argand. Referring to the chimney, he explained the importance of considering the proper size of the burner, and gave some interesting facts with regard to gas burners in general. He then directed attention to the new Silber lamp and the Silber gas burners, and demonstrated their economy, and the progress Mr. Silber had made in the construction of lamps without glass chimneys, of his punkah burner, and of the consecutive Argand tubulated burner. The lecture was fully illustrated by experiments, which were highly appreciated by the audience. The remainder of the evening, which was a very enjoyable one, was occupied by a new lecture entertainment—What I Saw in the Highlands, or Three Days in Athole—written by Dr. Croft, and ably delivered by Mr. J. L. King, and then followed the entertainment of Zetella, an adaptation of Cinderella, which is accompanied by much lively singing and music, well calculated to please the Polytechnic visitors. With regard to the Silber gas burners, it may not be out of place to state that they have been used for some time in the Mining Journal office, and that they certainly give a pure and brilliant light, which fatigues the eyes much less than when the ordinary burners are employed.

**NATURAL GAS FOR FUEL.**—In reply to enquiries from this office, we have received from Messrs. Rogers and Burchfield, the makers of a well-known brand of sheet-iron, the following facts in relation to the use of gas for fuel at their works at Leechburg, Pa.: "The weekly production of our Leechburg works is about 70 tons of sheet-iron; to make this amount 9100 bushels of coal, or 130 bushels per ton, would be required if we used coal for fuel. We have now been using gas for about seven months, procuring it from an abandoned oil well, 1250 ft. deep, situated about 1000 ft. from the works, and from which the gas is conveyed by a 3-in. pipe. The branch pipes leading to each furnace are 1/2 in. in diameter. We make all our steam with gas; we have one battery of four boilers driving an engine of 4 ft. stroke, 30 in. in diameter, at the rate of 45 strokes per minute which furnishes power for six pairs of sheet rolls and one bar train, from the same boilers steam being taken to drive two hammers; another boiler furnishes steam for a blowing cylinder which supplies the blast for seven knocking fires and one refinery; another boiler furnishes steam for a small engine driving the rolls for the manufacture of tin-plate; the gas is applied directly in five puddling furnaces, in which the waste is some 3 or 4 per cent. less than with coal, and the quality of the iron is greatly improved; we also furnish gas for four sheet furnaces, and find it much superior to coal, the waste in these furnaces being about 5 per cent. less than with coal, and further advantages gained are softer iron and a finer surface to the sheet; we have three large annealing furnaces, where we anneal in air-tight boxes, putting about 10 tons in each box, requiring about 20 hours to complete the process of annealing, and, we think, saving about one-half in annealing boxes; and in the tinning establishment the pots of tin, into which the sheets of iron are dipped, are also heated by gas. To use gas there is no change required in the construction of puddling furnaces, except that we use the patent water necks. These necks are an absolute necessity in using gas for fuel, as without them the intense heat generated by the gas destroyed the lining of the stack and melted off the dampers as fast as we could replace them. The grate bars, however, never burn out, and the puddlers' tools last about three times as long as they did when we used coal. In our heating furnaces where we cannot use water necks we are compelled to use a jet of steam to lessen the heat. Our production has increased about 33 per cent. since we began to use gas, and the iron made commands from \$10 to \$20 per ton more than the same class of iron manufactured at our Apollo Works, where we use coal, the iron being made from the same class of stock."—*Journal of the American Iron and Steel Association*, Sept. 24.

**STEAM GENERATORS.**—An invention patented by Mr. A. V. Newton of Mr. W. E. KELLY, of New Brunswick, consists mainly in a longitudinal partition or dividing plate within each tube, arranged to separate the upper and lower portions in communication at the back end of the tube in combination with pockets leading upwards within the chamber at the front end of the tubes.

**ELECTRO-GALVANIC QUICKSILVER SAVING APPARATUS.**—We examined the other day the quicksilver saving apparatus invented by Joseph Potts, of White Pine, which has just been made in this city. The apparatus was shipped to White Pine, where it will be placed in a mill belonging to John P. Jones, and thoroughly tested. It was tried with great success at the Eberhardt and Aurora mine, at White Pine, where Mr. Potts assured us he saved 25 lbs. a day from one of the tailings of a 60-stamp mill. He has heretofore taken no steps to introduce this invention, but with the tests to be made on the Comstock he is confident that it will be generally adopted as an adjunct to quartz machinery. The one examined is intended for a 20-stamp mill. The apparatus is placed below the tailings or battery, so that the tailings pass over it. It consists simply of a copper plate or blades, eight in a row and about 4 1/2 by 2 1/2 inches in size. Each riffle extends lengthwise the box, at an angle of 30° from the horizontal plane, and each row. These riffles are arranged so as to break the current of water and so that the tailings cannot pass down without coming in contact with the amalgamated surface. On the lower section of the box are a series of copper riffles across the width of the box. The lower edges of these riffles are perforated so as to allow the quicksilver and soft amalgam to pass out, as well as the upper and lower riffles, are all well coated with quicksilver. This copper box is enclosed in a zinc-lined wooden box, which may be closed and locked. As the copper rests on the zinc, on the admission of any tailings or water, however slightly acidulated, a galvanic action is set up. In addition to this, Mr. Potts has constructed a powerful battery with nine large cups. This battery is 6 ft. long and divided by glass partitions to form separate cups; it is lined inside with bees-wax. The zinc plates for the battery are 6 1/2 in. by 8 1/2 in. and one-fourth of an inch thick. This makes both an electric and galvanic battery, and is a large wooden box with a cover, so that it can be kept securely locked. With this small machine, 9 ft. long and 16 inches wide, at use in the old mill in White Pine, he saved 25 lbs. of floured quicksilver per day that was usually lost. The inventor of this machine is to be made at the mill where this one is placed, the price of which we shall publish as soon as they are completed.—*Mining and Scientific Press* (San Francisco).

## Registration of New Companies.

The following joint-stock companies have been duly registered:—

**THE SPANISH LAND CULTIVATION COMPANY (Limited).**—Capital 300,000*l.*, in 10*l.* shares. The acquisition of a Spanish company, entitled La Compañía Iberica de Reigos. The subscribers (who take one share each) are—W. D. Harries, 24, Coleman-street; W. Spain, 1, Gresham Buildings, E.C.; E. W. Wingrove, South End House, Twickenham; H. J. Stalley, Crescent-street, Thornhill; E. Pollock, University-street; S. C. Hayward, Cathcart Hill, Holloway; L. A. Bond, Buelah Villa, Walthamstow.

**SANDY GATE MILL COMPANY (Limited).**—Capital 20,000*l.*, in 5*l.* shares. To acquire a cotton mill at Sandy Gate, Burnley, Lancashire. The subscribers (who reside at Burnley, and take one share each) are—F. E. Artendale, B. Moore, N. Walton, G. Frankland, E. Foden, B. J. Rawlinson, and Thomas Dean.

**COATES NEW MILL COMPANY (Limited).**—Capital 5000*l.*, in 5*l.* shares. To carry on the Coates New Mill, in the West Riding of Yorkshire.

**PUDSEY MUTUAL FIRE INSURANCE COMPANY (Limited).**—Capital 30,000*l.*, in 5*l.* shares. The subscribers to this company, who reside at Pudsey, are—J. Banks, 100; R. Spencer, 100; S. Crowther, 100; G. Spencer, 50; N. Wilson, 20; W. Lowder, 50; S. Stables, 20; W. Stables, 40; and J. Jessop, 30.

**RIVERS PROTECTION AND MANURE COMPANY (Limited).**—Capital 150,000*l.*, in 10*l.* shares. For the purchase of improvements in the utilisation of sewage. The subscribers (who take one share each) are—F. D. Leslie, Quebec Lodge, Blackheath; H. C. Hind, Albion-road, Stoke Newington; P. H. Guernsey, Eldersfield-road, Clapham; G. W. M. Ellard, Grove Villa, East Ham; S. E. Riddell, Bramah-road, Stockwell; G. Roe, Wareham; A. Obsevit, 1A, Portland-road, Notting Hill.

**MANCHESTER COUNTY PROPERTY COMPANY (Limited).**—Capital 250,000*l.*, in 10*l.* shares. The subscribers to this company (who are all of Manchester, and take ten shares each) are—J. Dixon, Alma-terrace; G. Bradburn, Hulme; R. Irwin, Cheetham Hill; J. Longson, Deansgate; M. Oden, Brown-street; and R. Spencer, Whalley Range.

**BAYSWATER GENERAL DRAPERY AND MOURNING WAREHOUSE COMPANY (Limited).**—Capital 25,000*l.*, in 5*l.* shares. To take over a drapery business in Westbourne Grove. The subscribers are—A. Bourne, Chalk Farm-road, 300; A. Butler, Westbourne Park, 1; R. Rowlands, Artesian-road, Bayswater, 100; W. D. Butler, Stonebridge Park, Willesden, 200; J. G. Butler, Westbourne Grove, 200; D. A. Lang, Carter-lane, 20; C. Colling, Hampstead-road, 5.

**NEWINGTON WATER COMPANY (Limited).**—Capital 70,000*l.*, in 10*l.* shares. For the supplying of water to Newington, in the East Riding of Yorkshire. The subscribers are—D. F. Garbutt, Newington, 5000; W. Williams, Hull, 10; S. Cooper, Hull, 10; C. Whensit, Hull, 10; D. P. Thos. Barshaw, Hull, 10; W. P. Garbutt, Hull, 10; C. J. Todd, Hull, 10.

**NORMAN PATENT SEWING MACHINE COMPANY (Limited).**—Capital 25,000*l.*, in 5*l.* shares. To manufacture and sell sewing machines. The subscribers are—S. Brooks, King Henry's-road, N.W., 50; T. H. P. Hartley, 2, Park Villas West, N.W., 50; C. Brown, Carlton-road, Maida Vale, 50; R. James, Southall, 20; R. Hill, Coleman-road, 50; J. H. Green, Akeley, 30; S. W. Smith, Maida Vale, 15.

**MARINE SALVAGE COMPANY (Limited).**—Capital 25,000*l.*, in 10*l.* shares. To carry on the business of marine salvors. The subscribers are—J. A. Heathcote, Upton Bexley, 100; W. Stobart, 12, Paragon, Blackheath, 100; S. S. de Kanton, United Service Club, 60; D. J. Kennedy, 3, King's Bench Walk, Temple, 50; A. Sance, Rottenmouth, 25; W. Hensley, Hill Side House, Strood, 15; C. B. Temple, 14, St. James's-square, 12.

**ALLIANCE SYNDICATE (Limited).**—Capital 50,000*l.*, in 10*l.* shares. To carry on financial operations. The subscribers are—J. Turner, 6, East India Avenue, 10; J. Smith, 2, Queen's Buildings, Victoria-street, E.C., 15; J. Farrell, 2, Queen's Buildings, E.C.; A. S. Mignon, 2, Queen's Buildings, 5; E. A. S. Mignon, 2, Queen's Buildings, E.C.; G. P. Ivey, Peiray Hill, Catford, 10; S. F. Griffin, 10, George-street, 10; B. J. C. Hilden, St. Peter's Park, W. 5.

**NEW RHOSYDD SLATE QUARRY COMPANY (Limited).**—Capital 80,000*l.*, in 10*l.* shares. To purchase a slate and slab quarry in the parish of Festiniog. The first subscribers are—W. Casson, Sandbach, 22; J. Roberts, Portmadoc, 22; D. Griffin, Fronfab, Harlech, 22; R. Roberts, Festiniog, 22; G. H. Owen, Tremadoc, 22; H. W. Williams, Manchester, 44; and W. Davis, Festiniog, 44.

**CLIFTON WATER SUPPLY COMPANY (Limited).**—Capital 6000*l.*, in shares of 2*l.* 10*s.* each. To supply water to the parish of Hartshead-cum-Clifton, in the West Riding of York.

**REGISTERED LAND CORPORATION (Limited).**—Capital 500,000*l.*, in 10*l.* shares. To undertake the registration of titles to landed estates under the provisions of the Land Registration Act, and to carry on business as a land company. The subscribers (who take one share each) are—W. R. Cole, Spring Grove, W.; J. A. Mason, Gloucester-street, Warwick-square; F. J. Tingle, Talford-road, Camberwell; G. Reid, Elgin-road, Addiscombe; P. B. Lee, 87, Warwick-street, Belgrave; F. G. Whitcomb, Fenwick-road, Peckham; J. Scamen, Southampton.

**GEORGE LAND COMPANY (Limited).**—Capital 60,000*l.*, in 10*l.* shares. To acquire from the Liverpool Real Property Company (Limited) the George Estate, in Dale-street, Liverpool. The subscribers are—J. Dean, Egremont, 10; R. R. Minton, Bebbington, 150; D. Radcliffe, Lime-street, Liverpool, 150; J. Ramsay, Rusholme, Manchester, 150; A. Willott, Liverpool, 10; H. N. Abinnett, Liverpool, 150; W. Aitken, Greenock, 10.

**LIVERPOOL AND AMAZON ROYAL MAIL STEAMSHIP COMPANY (Limited).**—Capital 100,000*l.*, in 10*l.* shares. To acquire a concession granted by the Government of Brazil to Commander Mowin, to enable him to run a line of steamships to the Province of Amazonas. The subscribers are—A. Hoffman, Para and London, 10; L. Rosenberg, Richmond, 5; W. A. Nelson, New Barnet; J. W. Clark, Rendlesham-road, Clapton, 1; W. A. C. Browne, 34, Leadenhall-street, 1; H. Laurence, Southgate-road; A. Cross, Whitehall, 1.

**LEMON HART AND SON (Limited).**—Capital 150,000*l.*, in 5*l.* shares. To take over the business of Messrs. L. Hart and Son, contractors to the Royal Navy, &c. The subscribers (who take one share each) are—E. N. M. Kindersley, Crown Chemical Works, Stratford; H. M. Carter, 1, Great Tower-street; W. A. Richards, St. Mary Axe; Joseph Hodson, York; G. Browne, Willesden; J. Depledge, 58, Pentonville-road; and H. H. Thomson, 9, Tottenham-yard.

**E. FISHER AND COMPANY (Limited).**—Capital 20,000*l.*, in 5*l.* shares. To take over an aerated water manufactory business at Camberwell. The subscribers (who take five shares each) are—Greenville Sharp, 2, Gresham Buildings, 12; J. Drew, 2, Gresham Buildings, W. J. Tallantire, 29, Chancery-lane; H. E. Drew, 34, Newington Causeway; E. Fisher, Park-road, Camberwell; Alfred Williams, 1, Fenchurch-street; and A. Russell, Grange Villa, Thornton Heath.

**LANCASHIRE AND YORKSHIRE HOTEL COMPANY (Limited).**—Capital 20,000*l.*, in 5*l.* shares. To acquire an hotel at Blackpool. The subscribers reside at Preston and Blackpool.

## THE TERRIBLE MINE, OF COLORADO.

The Terrible Mine is owned by an English company—the Colorado Terrible Lode Mining Company (Limited), and is under the general charge and supervision of the resident manager, Mr. George Teal, one of the best business men in Colorado. Let us take things in order. Procuring candles at the blacksmiths' shop, where 200 or 300 drills are sharpened daily, we enter the cross-cut tunnel driven through the solid granite a distance of 350 feet. Here the railway track diverges to right and left on the fourth (or tunnel) level of the mine some 340 ft. below surface. We turn to the right, and find ourselves in a large chamber that has been excavated in the mountain. Here is a smoothly-working steam-engine used for hoisting and pumping, which is kept running day and night, with only two cords of wood. The hoisting apparatus is admirable, and works like clockwork. Large buckets are now used, but in a short time cages will be substituted that will be capable of doing more work. The hoisting shaft is securely boxed in, and pitches, with the vein at an angle of about 80°, or nearly vertical. Opening a trap-door we descend on a firm ladder past the fifth level to the sixth level, 120 feet from the engine-room. This level we explore from end to end. The mining is cleanly done; the timbering looks as if put in to last for ages; at short intervals we pass a chute where the ore is dumped into cars from upper workings in the stopes; here and there we pass under reserves of ore, and are able to trace the vein or veins of rich mineral. This entire mine is systematically worked under the superintendence of Harry Lamphire, an English miner of many years' experience in Cornwall, California, and Colorado. The Terrible Mine is all the diploma he requires. Everywhere we found the mine dry; returning to the shaft we saw why this was the case. Just below the sixth level is a cistern which catches all the drainage from the workings above, and this water is forced into the outer world by a pump in this level, operated by steam brought in a pipe from the boiler above. Down 60 ft. below us we could see the workmen sinking the shaft. The seventh level will be commenced at that point; but the work of sinking the main shaft goes steadily on, night and day, year in and year out. Fifty miners are employed in this mine, besides a number of carmen and ore dressers. Returning to the mouth of the tunnel we will follow the ore. Dumped from the car on a platform, two men with sledges commence operations upon it. Chunks of mineral, and mineral and rock, are passed into the dressing room; clear rock is tossed into a car and run out on a railway track to the waste dump; rock with little seams of mineral, or lumps adhering to its face, is piled up to await concentration; the small bits of rock and mineral, and the mud and dirt also go to the concentration works. From the dressing room, where many busy hands are engaged in sorting the ore into several classes, it is conveyed by wire tramway to the shipping rooms or concentration dump 720 ft. below.

The ore is graded into three classes: first, second, and third. The first averages about 550 ozs. per ton, and is all shipped to England; the second averages 180 ozs., and finds a market in Georgetown; the third averages much less, and is saved for concentration. From the Terrible Mine workings a dump pile of mineralised rock and dirt has accumulated, that is now estimated at over 4000 tons, and it is increasing at the rate of 200 tons per month. This stuff is worth at an average of 80¢ per ton, an aggregate for the pile of over \$800,000; and at the present rate of yield of the mine, an additional annual amount of nearly \$50,000. This was too much money to be lost, and as there was no market for such stuff, Mr. Teal determined to put up concentration works, by means of which he could save all the mineral at a slight cost, and getting rid of the waste by concentrating 10 tons into one, secure a good marketable product. Last year he rigged up several Cornish jigs, worked by hand, and besides saving considerable money, demonstrated the practicability of saving virtually all the mineral from the mine. He, therefore, set about the erection of concentration works. Let us go down there where the red steamer, bearing in silver letters the word "Terrible," presented by Miss Teal to her father, floats from the masthead in the breeze, and under the escort of Mr. Edward Eddy, the foreman, take a look through the concentration works. A turbine wheel, furnishing 30-horse power, which is communicated by means of a wire-rope, drives all the machinery. At present only the fine dump is being worked upon; the coarse rock is awaiting the completion of the crushing apparatus, which consists of a heavy Blake crusher and Cornish rollers, which will be in operation in about ten days. The pulverised material will be conveyed to the gateway of the works by an elevator. What we term the gateway is a revolving screen of heavy iron; this is about 8 feet long, and set at a slight incline. It is perforated with inch holes,

and jets of water spurting from a tube running down the centre serve to thoroughly wash every particle of material passing through. All the rock and ore too large to pass through is conveyed to a sorting table, where a row of boys, with bits of curved iron, are kept busily employed in sorting the pile into four grades—first class, averaging about 550 ozs.; second class, 180 ozs.; third class, saved for crushing; fourth class, waste rock. The material that passes through the revolving screen takes a different direction, being conveyed to a series of three Cornish jigs, where every valuable particle is saved, and waste rock thrown away that will not pass through a sieve of six holes to the square inch. Messrs. George and James Teal and Edward Eddy have made a wonderful improvement in the operation of these jigs, and have applied for a patent upon it. Heretofore, the deposit collecting below the lower screen necessitated frequent stoppage in order to remove the deposit by hand, which was a work requiring considerable manual labour, and involving much loss of time. The patentees of the new process obviate all this by having the jigs set at different elevations, while a current of water passing through the series of chambers carries the deposit forward, and keeps them clean.

At present about 30 tons of dump are concentrated every ten hours. About 20 tons of this are disposed of on the piling table and in the Cornish jigs above the six-hole sieve. But that other ton must be followed up and caught, or a great portion of the profits would be lost, for it is largely composed of the most valuable portions of the mineral—powdered galena, ruby, and brittle silver. Let us see the arrangements made for arresting it in its flight. When it leaves the series of jigs, it discharges into a pit, and is caught in the buckets of an elevator and conveyed up to a revolving cylinder perforated with 12 holes to the inch. The material passing through this goes to a series of enriching jigs, and the remainder to two Kember automatic jigs. After dropping into the Kember jigs, it is resolved into three classes—the waste constantly passing off at the top, the light zincy ores working up and discharging through a tube in the first chamber, and the galena in the next. Following the fine stuff we find in the first receptacle fine zinc, averaging 85 ozs. of silver to the ton; in the second iron pyrites and brittle silver, averaging 518 ozs., with a trace of gold; in the third fine galena, averaging 300 ozs., 62½ per cent lead. One would suppose that all the silver had been arrested by this time, but not so. Passing constantly along is a mass of muddy water from all the jigs, carrying with it mineral, flour-like in fineness, which makes the slime (as this muddy water is called) worth, by assay, 27 ozs. silver per ton. This is too precious to waste, and the same gentleman who improved the Cornish jigs invented and applied for a patent on an apparatus for saving nearly all this fine powder. The slime passes through troughs, out upon two slanting tables, which are made in two shelves or sections; as it ripples slowly down, the heavier particles settle on the boards, and the light waste floats on top; meantime a trough over the head of a table is filling with water. The workman who attends these tables passes lightly over the surface of the floor with a long broom-brush, the flow of slime having been shut off, and the waste is carried away; then he moves a lever which empties the trough of water, and raises a board at the end of the section, so all the mineral is caught in a trough that carries it away into a receiver. By the time one table is clean the other is ready to be cleaned; and as this process goes on hour after hour. The material saved on the first section of the tables from the slime averages 180 ozs. to the ton; that from the lower section 21 ozs. After leaving these tables there is still 3½ ozs. of silver per ton in the tailings, and Clear Creek whirled this away to deposit it at leisure along its rocky bed. These concentration works are now, as we have said, working about 30 tons per day. Mr. Eddy informs us that in about ten days, when the crushing machinery is in full blast, and several new jigs put in, the works will have a capacity of 60 tons every ten hours. Next year the whole works will be enclosed with a building 75 ft. wide by 125 ft. long.—*Colorado Miner*.

## VAZEERI RUPI MINES, KULU.

An attempt has lately been made by the Punjab Government to annex the above mines, instigated by some "old Indians," who cannot reconcile themselves to the idea of an outsider having obtained them. The proprietor, however, has memorialised the Governor-General, who has been informed that the late Lord Mayo instructed Sir T. D. Forsyth to write to the proprietor, in 1869,\* emphatically impressing on him that his Excellency felt a deep interest in the result of the mines, and that he would grant him leases on any mineral lodes he might discover for a nominal royalty. Probably the fact that at the antimony mines alone 25 tons of rich ore were taken out by seven natives in one month has excited the cupidity of the Punjab Government, one of whom gave the excuse "the property is too extensive for an outsider to possess." The sett being 670 square miles in perpetuity. It is not likely Lord Northbrook will be dictated to by the Lieutenant-Governor of the Punjab, or any of his myrmidons, to dispossess a man of his property without law or reason, after five years' peaceable possession, although such things have been done before in India.

Dr. Stolitzka was to have reported on these mines after his expected return from the Yarkund Mission, had he not died. Sir D. Forsyth states that he had a great opinion of their productiveness.

\* To J. CALVERT, Esq., Kulu. *Simla*, Aug. 8, 1874.  
DEAR SIR,—In reply to your letter, I think the greatest help I can give you is to repeat what Lord Mayo authorised me to write to you in 1869. Perhaps you have my letter by you, and I can only quote from memory, but his words were to the effect that if you could discover silver or other valuable mines he would give you every encouragement, by taking only the usual royalty. He emphatically expressed his desire to assist all such enterprises as yours. You can make use of this. Dr. Stolitzka, had he lived, intended examining carefully the Kulu Mines, regarding which he seemed to have formed a good opinion.  
(Signed) T. DOUGLAS FORSYTH, K.C.S.I., &c.

**INTERESTING DISCOVERY.**—Another interesting discovery in connection with Indian iron manufacture has been made by Mr. T. W. Hughes, of the Geological Survey. So early as 1869 he had drawn attention to the existence of manganese in the Kamptee series; but the proportion of this to the other substances found in combination was too small to render the discovery more than interesting. Last season, however, Mr. Hughes satisfied himself that manganese ore of good quality existed long enough to make all such enterprises as yours. You can make use of this. Dr. Stolitzka, had he lived, intended examining carefully the Kulu Mines, regarding which he seemed to have formed a good opinion.  
(Signed) T. DOUGLAS FORSYTH, K.C.S.I., &c.

**NEW CONSOLS TIN AND ARSENIC WORKS.**—Although the new reduction processes in course of introduction here have not yet been productive of commercial results, it appears from the statutory meeting of the company, held last week, that Capt. Pryor and others concerned are still sanguine, and it is much to be hoped that they will not be disappointed. The Chairman (Mr. H. L. Phillips) stated that the object of the process was to utilise all the valuable metals contained in their ores. He explained that they had a valuable property for tin, and in the production of it they obtained much arsenic in the form of arsenious acid, which was collected and sold. They had, in addition, copper, silver, sulphur, and iron. They had obtained 16 tons of precipitate of silver and copper from 1300 tons of ore, but it was not sufficiently pure to be marketable to advantage. They are now about to re-model the temporary works by which they have manufactured this precipitate, and expect in three months to be able to treat 60 tons of mineral daily. This would represent about 250 tons of precipitate per annum. The arsenic and sulphur in the ore, as any chemist would have anticipated, prevented the successful application of the chlorination process, they, therefore, intend trying to roast these off first. For that purpose they are now erecting eight reverberatory ovens, connected with suitable arsenic flues. They also find it necessary to crush the ore finer, and are, therefore, erecting a powerful steam-engine and two very powerful crushers. The Chairman of the meeting could not see why the treatment of their stuff should not leave them a clear net profit of at least 30s. per ton upon every ton of stuff treated, and as Dr. T. L. Phipson, who has had some chemical experience, was present, as a director permitted the estimate to pass unchallenged, it may be said that the estimate is not extravagant. Indeed, it seems that Dr. Phipson has tried several specimens, and found 11, 12, and even as high as 24 ozs. of silver to the ton; as he must thus be well acquainted with the character of the stuff a direct and unequivocal opinion from him as to the probable practicability of the new process, and an outline of the mode in which it is to be applied to give commercially satisfactory results would be particularly interesting to many of the shareholders of the company, and of great utility to the public. Practically there is no limitation to the quantity of mineral they can produce at New Consols, and Dr. Phipson might be able to prove that there are equal facilities for raising and treating it to a profit. Capt. R. Pryor and Mr. S. in concluding an elaborate report, state that they have only to repeat, fearless of contradiction, that they have an inexhaustible supply of minerals—tin, copper, silver, and arsenic—and that by cutting up the lode in a proper manner these can be very cheaply broken and brought to surface. By the process they are about adopting on a large scale they think to utilise the whole of the valuable minerals contained in their stuff, and that their profits will simply be regulated by the extent of their appliances. With the many valuable lodes they have, and the enormous amount of minerals, they feel sure that their property will be second to none in the kingdom. Dr. Oxland has stated that by not utilising their sulphur they are throwing away into the clouds about 20,000*l.* per annum. The manufacture of sulphuric acid would involve an extra outlay, but Mr. Phillips wished it particularly to go forth to the world that the whole of these new processes were not of necessity sources of great additional expense. When dressing only their tin they had to burn it to remove the arsenic, or the smelters would not buy it. They had only to roast it again, and treat it with common salt, &c., to extract two other metals they had hitherto allowed to run away. Captain Pryor expressed his opinion that, with 9d heads of stamps, they could make theirs a profitable concern for tin and arsenic in the old style of working alone.

**DIRECT-ACTING ENGINES FOR STEAM-PUMPS.**—Mr. J. PICKERING, of Stockton-on-Tees, has patented an invention which relates to certain improvements in the cylinder, slide-valve, and steamways. One part of the improvement consists of the cylinder having double steamways at each end, one the ordinary and the other the auxiliary. Another part of the improvement provides an arrangement for moving a slide valve by steam-pressure exerted at the end of each stroke of the piston with the use of tappets or levers. This invention provides an arrangement by which an auxiliary steamway passes through the cylinder, and opens into the end of the slide-valve. These steamways in combination procure continuous reciprocating action to the slide-valve and piston. Further, this invention provides an arrangement for altering the position of the auxiliary steamway



**ALLTAMI COLLIERY.**—Good progress is being made at this colliery, and the main coal in Section B will be reached, it is thought, next week.

## JOHNSON'S NEW UNIVERSAL CYCLOPÆDIA

The varied character of the knowledge which has to be brought together in an encyclopedia renders it almost impossible for one man, however diligently he may have studied, to undertake with reasonable prospect of success the task of producing a work sufficiently reliable to secure it a good reputation, and thus command a circulation which shall repay the cost of publication; yet the enormous outlay involved when anything beyond careful compilation is attempted has prevented, in almost every case, the use of original articles in encyclopedias issued at prices sufficiently moderate to place them within the reach of private individuals to whom, before all others, a work is an invaluable companion. The student and the man of science, enjoying the advantage of extensive library facilities, can dispense with an encyclopedia with but little inconvenience to himself; but in the ordinary household there is no room for such a costly possession. The first volume of "Johnson's New Universal Cyclopædia: A Scientific and Popular Treasury of Useful Knowledge" (New York: A. J. Johnson and Son, Grant Jones-street), has now been issued, the 1677 pages, reaching from "A." to "Ezra," so that there need be no doubt as to whether it will be completed in the three volumes as promised. The work is being got up regardless of expense, nearly every article being original, and specially written for the book, and the names of none but men of high scientific and literary position in Europe and America appearing in the list of contributors.

It will be unnecessary to offer further evidence of the reliance placed upon the information given in the Cyclopædia that is supplied in the mention of the facts that President Barnard, of Columbia College, New York, and Prof. Armand Guyot, of the College of New Jersey, are the editors-in-chief, and that they have been assisted by such men as Prof. Chandler, of Yale College, Prof. Drisler, Dwight, Newberry, and Parker, of Columbia College, and Dr. Drisler, and Woolsey, of Yale College, the Hon. Dr. Marsh, U.S. Minister to Mexico, and others of scarcely inferior reputation, as well as of three assistant editors, an editor, associate, and assistant has had a certain defined field of labour allotted to him, according to the particular branch of knowledge to which he has devoted himself. Thus, Prof. Drisler has been charged with the editing of the English and foreign literature; Prof. Drisler takes Greek and Roman history; Prof. Barnard, mathematics and physics; Prof. Guyot, physical geography; Prof. Chandler, climatology, &c.; Prof. Chandler, chemistry, its applications, &c.; Prof. Newberry, geology, natural history, &c.; Dr. Parker, medicine, surgery, and the natural history of man. It is not to be wondered at that a thorough master of the subject he has undertaken, and would be unlikely to be the less so, in the presence of any view not fully substantiated by ascertained fact, yet it may be presumed that the necessity for rejection will not be frequent considering that the contributors are men who have to arrange include some hundreds of scientific and literary memoirs of both hemispheres—Prof. Dana, of Yale; Prof. Eggleston, of Columbia; Dr. Will, of the University of St. Louis; Dr. Schuchert, of Cornell; Dr. Wyndall, Canon Kingsley; President Porter, of Yale; Dr. Raymond, U.S. Commissioner of Fish and Game, and others whose names are equally well known throughout England and America.

Judging from the volume before us, the work will be without equal as a cyclopædia, and unquestionably the most useful, which the general reader or the man of business can possess. To state that it is a library in itself is scarcely sufficient, for it represents such a library as but few who have been connected with science and literature for the last quarter of a century can boast of. The printing, paper, and general workmanship of the book could not be surpassed, and there need be no hesitation in predicting that both in the New World and in this country the cyclopædia will be extensively patronised and consulted, and universally approved of.

**PEAT.**—Messrs. A. BARFF and J. KIDD, of Lawrence Pountney-lane, City, has patented some improvements in apparatus for drying, charring, granulating, compressing, and burning peat, and in apparatus connected therewith. The chief novelty of this invention consists—1. In drying, charring, or distilling granulated peat in revolving cylinders or chambers by forcing the products of combustion through a rough, or a row of, said cylinders or chambers by a fan blown by steam, or by the escaping force of a jet of superheated steam.—2. In apparatus for pressing or moulding disintegrated peat by forcing it through iron pipes or cylinders.—3. In the method and apparatus for burning the fuel by injecting it into cylindrical furnaces by the escaping force of a jet of air or steam.

**ENGINES AND PUMPS.**—**MR. G. A. TEULON**, of Haverstock-terrace, Hampstead, Middlesex, has patented some improvements in cylinder engines and pumps, the object of which is to increase the effective force of the motive-power and economy. The improvements consist in the employment of a projecting thread for the two raised portions of the screw-threads on the surface of the drum, acted upon by two friction rollers or lateral projections from the piston or other rod suitably and actuated by it, also in an arrangement of additional cylinders. This cylinder or cylinder, denominated the "crank drum," is formed as follows:—Centred axially and revolving with the main shaft (which is parallel with the piston or other rods connected thereto) is a drum or cylinder, the length of which slightly exceeds that of the stroke of the piston or other rods, and the diameter of which is formed not less than the half of such length nor more than equal to it. This drum has formed upon opposite parts of its surface two raised or projecting portions of screw-threads (a right and a left hand of half a turn each), which form one continuous thread by joining each other at opposite sides of opposite ends of the drum, when they are extended into curves, which form a transition from one diagonal thread to the other. These curves are formed with the radius of the outer curve smaller than that of the inner; a good proportion of the various parts is that the radius of the outer curve should be one-third the radius of the inner, and the radius of the friction rollers should correspond with that of the outer curve. If the transverse section of the screw-thread be, as in the case of small powers, rectangular, then both friction rollers should be cylindrical; but for larger powers greater ease of action is secured by making the friction rollers slightly conical (applied with the base outward) and bevelling the two acting surfaces of the screw-threads to a corresponding degree. In certain cases the friction rollers may be dispensed with, and the drum actuated by a lateral fork or projections. Facility is afforded by the arrangements for applying the drum to the piston or other rod, and may be actuated by the crank drum, and the crank drum may be similarly applied to transmit motion from a revolving shaft to pumps or valves. When applied to a motive-power engine, steam, gas, air, or water may be employed.

**ARTIFICIAL FUEL.**—**MR. W. RADEK**, of Gracechurch-street, City, has patented some improvements in the manufacture of peat, in the method of drying and charring it, and in structures and appliances to be employed for such purposes, being partly also applicable to the manufacture of artificial fuel. Fuel, which has been effectually macerated and pulped by any suitable pulping or grinding mechanism, and may further have been freed of parts of its water by pumping machinery, is dried in a narrow and comparatively long shed with hot flue pipes at the bottom, under which are perforated cold air pipes, which, by a peculiar double funnel joint are connected with a vacuum, which is inclosed at the very top funnel joints, and through which from outside a blower forces cold air at a very high velocity. Inside the shed the ascending or outflowing air is exhausted through the ventilating flues, which may also be provided with what is known as "air pumps" or "ventilators." The roof is arched, or funnel shaped. Artificial fuel is dried by the same method. Peat is subjected to a similar treatment. The fuel is dried on an elevated plan which forms the highest of the furnace. Two such furnaces are erected, and the elevated plan on its highest point forms the centre between them, where they run into one common smoke flue. The small of the elastic coal produced during charring is compounded with pulped peat, lime farina, bituminous or resinous substance, or the volatile grease obtained from charring. This is compressed and dried, and may subsequently be re-charged.

**SOCIETY OF ENGINEERS.**—At the meeting, on Monday, a discussion will take place on Mr. P. F. Nurey's paper on "Mechanical Puddling," which was read at the last meeting. Should time permit, a paper will be read on "The Working of Marine Worms, and the Remedies applied in the Harbour of San Francisco, California," by Mr. John Blackburn, C.E.

**PERU.**—The contract for the construction of the Lima and Pisco Railway, Peru, 145 miles long, tapping the rich and productive valleys and sugar plantations between Surco, Chorrilles, Lurin, Mala, Coaylla, Canete, Chimbote, and Chincha Maja, and connecting the towns of Lima and Pisco with the flourishing shipping ports of Callao and Pisco, on the Peruvian coast, has been awarded to Mr. Robert Walker, contractor and engineer, of Westminster Chambers, Victoria street, Westminster, the Peruvian Government having granted a concession giving the land, and guaranteeing 1,040,000*l.* towards the work, which will be proceeded

**SALT IN CANADA.**—The salt beds discovered on the Canadian shores of Lake Huron several years since are now turning out salt of superior quality and in such quantities that the Western markets are being largely supplied with their product. These beds are described as inexhaustible. At the depth of 1000 ft. to which the Gooderich Company have sunk their shaft, the purest rock salt is found. Brine is also obtained from this source of full strength, and in any quantity.

**HYDRURIUM.**—This is the new name proposed for the metal of which hydrogen gas is considered to be the vapour. There are several reasons for accepting this view; one is that hydrogen behaves in chemical compounds like a metal, it can replace a metal and be replaced by a metal, according to the same equivalents, while recently alloys have been made of hydrogen with metals. Graham made an alloy of hydrogen with palladium, one of the heavy metals, and deduced from the density of the alloy and the amount of hydrogen that it contained that the specific gravity of the latter in this alloyed state of hydrium was 0.83. Recently he made the alloy of sodium, one of the lightest metals, and in the same way found for the specific gravity of hydrium 0.83. This number is very near that of hydrogen which is the lightest of all metals, its specific gravity being 0.000000000896.

—*Manchester Guardian.*

**SIGNALLING IN MINES.**—Mr. Kent, of Sebastopol, has forwarded to the mining department a model of a new system for signaling up and down the shafts. On one side of the shaft there is a line of rods, each rod being connected to a hammer provided for each level. A similar rod, supplied with like number of hammers, is furnished on the other side. The one line is for communicating with the top, and the other for communicating with the men below on the different levels. Provision is made for each level to have independent communication with the surface, and for the braccman to know the level from which he is being communicated with the moment the signal on top sounds. The construction is of the simplest description, and probably the more meritorious on that account.

COPPER ORES SOLD AT THE CORNWALL TICKETINGS FOR THE  
QUARTER ENDING SEPTEMBER, 1874:—

COMPANIES BY WHOM THE ORES WERE PURCHASED.

COPPER ORES SOLD AT THE SWANSEA TICKETINGS FOR THE  
QUARTER ENDING SEPTEMBER, 1874:—

COLONIAL			
Canada	2760	\$68,434	14
Union	1628	9,135	5
West Canada	407	7,197	18
Harraraw	132	1,088	14
Concordia	14	0	0
Concordia	13	459	1
Australian	25	388	0
Total	5000	\$87,753	50

Total .....	389	£ 3,931 16 6
<b>RECAPITULATION.</b>		
British .....	2905	£16,222 2 0
Colonial .....	5202	87,751 5 0
Foreign .....	389	3,931 16 6
Sundries .....	452	5,083 8 6
Total .....	8978	£112,938 12 0

**MINING NOTABILIA.**  
[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

**WEST ESGAIR LLE.**—In the western mine all works are proceeding steadily, 60 tons of ore have been dressed and sent to the shipping port, and another parcel is now being got ready for market. The different ends and pitches of the ore in the eastern mine: The cross-cut at the 34 ft level is now approaching the north, or ore-bearing, end. The last year the mine has now have shown a considerable improvement, no doubt, the ore will be cut before another week has passed. This will give 10 fathoms of backs of rich ground available for immediate stoping, and this part of the company's property will then become like the western mine, profitable to the shareholders. All the machinery in the eastern mines is in excellent condition and working well. Prospects never looked so bright.

**WEST CHIVERTON MINE.**—The adjourned meeting is convened for Friday next, the 23rd inst., at noon, at the London Tavern, Bishopsgate-street. Shareholders unable to attend would act wisely in sending their proxies to the committee appointed at the meeting held on the 25th ult., rather than entrust them to any individual shareholder. The committee personally represent between them more than one-tenth of the mine.

**KINGSTON VALLEY.**—In the neighbourhood of Callington and in the parish of Stoke Edmound this silver-lead mine has recently sprung up, which is generally thought to be of great promise. Although only at present to the depth of about 20 fathoms, the lode is already yielding a fine mixture of lead and blende ores. The country is considered of a very congenial character, and it is reported that they have a very fine flookan in connection with the lode with cross-courses, and other indications, which by practical men are considered most favourable for the production of mineral. The lode, which is of extraordinary size, has been opened upon for a great length at surface, and it is hoped that the discoveries made upon it will lead to the resuscitation of mining in the Callington district.

**WHEAL LUDCOTT (St. Ives).—**It is currently reported with confidence that this mine will be resuscitated shortly by a new company. The concern was abandoned about eight years since, and it will, no doubt, be in the recollection of many of our readers that remarkable deposits of silver were discovered at the last working, which gave rise to very considerable speculation with capitalists, and shares at intervals reached startlingly high prices, considering the depth of the mine. Much interval has since elapsed, and the mine has been almost entirely forgotten.

COAL AND IRON IN AMERICA.

Mr. HUGH McCULLOCH, who rendered extraordinary service to the United States through the vigorous and manly policy which he pursued as Secretary of the Treasury towards the close, and after the close, of the great civil war, has published some interesting observations on the course of the American coal and iron trades, especially with reference to the ideas which find such favour among the Americans with regard to protection for native industry. Mr. McCULLOCH observes that iron steam-ships can even now be built about as cheaply in the United States as they can be turned out in Europe. With a reduction of duties upon the materials which are used in their construction they could be built cheaper, so that the great yards for building iron ships, not only for the United States, but for other nations, would, Mr. McCULLOCH thinks, be found at no distant day on the banks of the Delaware, instead of on the banks of the Clyde. The great State of Pennsylvania, an empire in itself, clings to protection as if her prosperity depended upon it; but Mr. McCULLOCH thinks that she will never know how great her resources and her power are, or what her people are capable of accomplishing until she ceases to look to the Government to protect her supposed interests, and learns to rely upon herself. There is no more reason why she should ask the Federal Government to protect her iron manufacturers against foreign competitors than against the competition of Missouri, Virginia, and Tennessee. Mr. McCULLOCH observes that the plea that American labour must be protected against what is called the "pauper labour" of Europe is played out. Pauper labour in the factories and furnaces of Europe is in reality a mere figment of the American imagination, as English ironmasters and cotton manufacturers know to their cost. Skilled labour is in as great demand, and is as costly, estimating the difference in the cost of living, on the European as on the American side of the Atlantic. If this were not the case, Mr. McCULLOCH considers, the difference would be more than equalised by the superiority of American machinery, and the superior cleverness of Americans in the use of it. The Americans have iron literally cropping out of the earth—mountains of it, in fact—of the best quality, and coal for smelting and manufacturing it is generally found also in its immediate neighbourhood. In Great Britain, on the other hand, iron ore is only found some hundreds, if not thousands, of feet below the surface, and large quantities of the ore have to be transported, at great expense, to the coal districts to be manufactured into iron. When it has been thus manufactured, it has next to be forwarded, at still greater expense, to the markets of the United States. Mr. McCULLOCH asks—it appears not unreasonably—whether the iron-makers of Tennessee, Missouri, and Pennsylvania require to be protected against English competition? Should coal again, he asks, be increased in price by a tariff which practically prohibits the introduction of it into the Dominion of Canada,—coal, which is the producer of the great motive power which has wrought such wonders throughout the world, being found in inexhaustible quantities in the United States.

The great difficulty which, as it appears to us, always cripples the operations of the Americans is their reckless disregard of the laws of credit. This disregard has caused a suspicion of almost every American enterprise among the capitalists of European countries. The ordinary Englishman shrugs his shoulders in most cases when an



## FOREIGN MINES.

**ST. JOHN DEL REY MINING COMPANY (Limited).**—Advices received Sept. 30, 1874, via Bordeaux, dated Morro Velho, Aug. 29:—  
**Mining Works.**—These operations, since last advice, have been continued regularly, and with few interruptions.  
**Gold Produce to Date.**—The gold extracted during the second division of August, a period of 11 days, is as follows:—

Mineral at stamps	Ozts.	Tons.	Ozts. per ton.
Retreatment	7731.8	from 1231	= 6.281
	552.7		= .473
<b>Total</b>	<b>8314.5</b>	<b>1231</b>	<b>= 6.754</b>
Ozts. Ozs. Troy.	Tons.	Ozts. Ozs. Troy per ton.	
8314.5 = 958.5266, from 1231 = 6.754 or .7788			

Compared with the statement for the first division of August, the above return shows a greater daily duty in the reduction of mineral, though the gold results therefrom are less by 4 ois. per diem. The lode under treatment has been much depreciated by the increased proportion of pyrite mineral, mixed with kila, that has been received from the western section of the lower part of the excavation.

**Rain Fall.**—Within the last few days two light showers of rain have fallen, but they have not tended materially in increasing the water supply.

**Advices received Oct. 10, per Niger, dated Morro Velho, Sept. 11:—**  
**Mining Operations.**—From the 1st to date the usual mining work has been carried on with regularity, the extent of the quarrying and hauling of stone being limited by the diminished supply of water-power now available.

**Hauling of Mineral.**—From the 1st to the 10th inclusive the average daily haulage of mineral amounts to 137 wagons.

**Reduction.**—The stamps employed in the reduction of ore have been kept steadily at work, excepting when under necessary repairs, and though they are being worked slower than during the month of August, owing to the decrease in the water-power, still they are kept well supplied with mineral, which is being broken somewhat finer than usual to favour reduction.

The general operations of the company are being carried on regularly, and without any interruption or delay worth noting.

**Advices received Oct. 15, per Neva (8), dated Morro Velho, Sept. 17:—**  
**General Operations.**—Since addressing the managing director on Sept. 11 the general mining and other work has proceeded with regularity, whether as regards the quarrying or hauling of mineral, or of the reduction thereof by the stamping mill.

**Produce for August.**—The gold extracted during the month of August has amounted in all to 25,947.6 ois. It has been derived as follows:—

From general mineral at stamps	Ozts.	Tons.	Ozts. per ton.
24,099.5 from 3535	= 6.817		
Retreatment	1,848.1		= .522
<b>Total</b>	<b>25,947.6</b>	<b>3535</b>	<b>= 7.339</b>
Ozts. Ozs. Troy.	Tons.	Ozts. Ozs. Troy per ton.	
25,947.6 = 2991.3361 from 3535 = 7.339 or .8459			

The above gold return is a trifle above (say, 161 ois.) than that obtained in the month of July, the standard yield being almost the same. Considering the diminished water-power available in August, the produce extracted may be regarded as satisfactory.

**COST AND PROFIT—AUGUST.**  
 The produce being ..... 25,947.6 ois.  
 Deduct loss in melting ..... 255.1

25,692.5, at 7s. 9d. per ois. .... £9951 19 4½

Cost, less sums received in reduction of the same ..... 5992 5 6

Profit for the month of August ..... £4859 13 10½

The total cost for August is 434. more than was incurred in the month of July. Besides extra charges in August, the receipts to credit of cost are less by 224. than those of the previous month; hence the small amount of profit shown, though the produce was practically of the same value.

**Mining Department.**—The duty performed in the mine during the month of August may be seen from the following return of mineral actually quarried and delivered at surface:—

Borers daily	Holes blasted	Depth of holes.	Average depth of holes.	Wagons of mineral hauled.
11457	2558	103,644	39.26 in.	3804

This shows a smaller daily duty was performed in July by at least 748 wagons. This has arisen partly from the less advantageous state of the excavation for quarrying, the fluctuating attendance of native borers, and chiefly from the diminished water supply.

**Reduction Department.**—The reduction of mineral and the extraction of gold from the sand have been steadily and successfully prosecuted during the month of August. Larger duty has been performed than might have been expected, remembering the great diminution which has taken place in the available supply of water.

**Gold Extracted to Date.**—The produce extracted during the first division of the month of September, a period of 11 days, is as follows:—

From general mineral stamped	Ozts.	Tons.	Ozts. per ton.
9187.6 from 1218	= 7.543		
Retreatment	634.9		= .520
<b>Total</b>	<b>9822.5</b>	<b>1218</b>	<b>= 8.063</b>
Ozts. Ozs. Troy.	Tons.	Ozts. Ozs. Troy per ton.	
9822.5 = 1132.3743, from 1218 = 8.063 or .9294			

The above is more than average produce from the mineral treated, and may be considered a good gold return for the period, with the present decreased water-power.

The following telegrams have been received:—

Sept. 21: Produce 12 days of August (third division), 11,500 ois.; yield, 7.8 ois. per ton; produce per diem, 962 ois. Produce for the month of August, 25,800 ois.; yield, 7.3 ois. per ton; produce per diem, 837 ois.

Sept. 24: Produce 11 days of September (first division), 9750 ois.; yield 8.3 ois. per ton; produce per diem, 886 ois.; profit for the month of August 4800. Water short, and very dry.

Oct. 6: Produce for 11 days of September (second division), 8855 ois.; yield, 8.0 ois. per ton; produce per diem, 805 ois.

**DON PEDRO.**—Letter from the mine captains, dated Sept. 10: The ore has been derived principally from the No. 6 and No. 8 shoots. A small amount only has been broken from the bottom of the stopes in Canoa. In consequence of the surface water falling off, we could not overcome the last sand and boil encountered, but we fixed the bob in Alice's level, which has enabled us to again reach the bottom, and if no further hindrance be met with, the 40 fm. cross-cut will be completed in a few days. At Matto de Tambor we have found some good looking ground, and on the 4th inst. we took four samples, three of which proved to be auriferous, and the fourth inst. possible places a force here to develop this very promising section. No change has taken place in the stopes throughout.

—Report for August—Produce and Cost: Produce, 6558 ois. (equal 756 ozs. Troy), at 6d. per ois., 2782. 6s.; cost, 2672. 12s. 7d.; profit, 113. 13s. 6d.

—First Division of September: Produce weighed 1541 ois. Mine captains' report dated Sept. 17: Operations generally have been continued satisfactorily. The water down nearly 13 fathoms on the dip, below the 30 fathom cross-cut, and the extra depth is required, however, for a gutter, and the shaft being so flat no loss of depth would be for the purpose.

—Telegram from Rio de Janeiro Oct. 14: Produce for the month (September) 7100 ois.

**ROSSA GRANDE.**—Report for August: Produce, 4424 ois. at 8s. 3d., 112s. 10d.; cost, 3282. 6s.; loss, 145s. 12d. 6d. The daily average of force has been 46.8. The mineral treated from the third formations is a little lower in yield than that of last month; this may be attributed to the fact of our having stopped a portion of the lode about 4 fms. from surface in order to improve the road leading into the mine. The lode in the bottom has a very good appearance, but we must at present treat a sufficient quantity to show favourable results. The scale of our operations, when the size of the lode is considered, can be called little other than sampling. The value of the produce so obtained is 967. 6s. 4d., and the proportion of cost incurred is 295. 8s. 10d.

**BERNHARDT AND AURORA.**—Telegram from Capt. Drake: Work, September—Fifteen days, 5700 tons crushed; average assay, 356; bullion produced, 11,523. No change in mine.

**SWEETLAND CREEK.**—Telegram from the superintendent: We have cleaned up after a run of 63 days. The gross returns are \$32,000; the running expenses are \$16,000; the profit is \$16,000. I send you a remittance of \$10,000. Total cost \$1100.

**RICHMOND.**—Telegram: Week's run, \$44,000.

**JAYAL.**—The directors have advices from their manager under date Sept. 6. Extract from report:—20 stamps have worked 20½ days, crushing 20 tons of quartz, yielding 4000 ois. of gold, being an average of 7 dwts. 14½ grs. per ton. Remittance valued at 1102.; expenses of month, 529.; balance profit, 571.

**UTAH (Silver-lead).**—J. Longmaid, Sept. 26: Since my last of the 1st inst., I have sold nearly all the ore, shipped it, and received the cash for it, and have enabled me to pay nearly all the wages; there remains, however, about \$600 for agents, which we have to receive \$2000 from Mr. Bateman, and about \$1400 for minor expenses are that amount I fear \$350 will prove to be a bad debt. Salaries and other expenses of my cablegram is a great disappointment, as I could have set off the company's affairs immediately if I had the needed powers. A party in connection with the use of the dressing works from this time till the frost stopped from first to last—delay out of course to take. It is just the same all the way through. Now we are in the pleasant position of expecting almost daily to have accounts against us. Mr. Bateman has been coming for the last three months, and although daily expected may be three months longer: during the past twelve months you have seen a good deal more of him in London than we have here. He is able to assist in settling things right, I have decided on leaving here as early as possible. I shall take and shall probably leave in about three weeks. July wages are for the course of three or four days, and he will then be able to see off the statement for the month of July.

**NEW PACIFIC.**—J. D. Pringle, Sept. 20: My last is dated on the 10th inst.; have received no letter from you since that date. Have had 5 tons of ore on hand of same quality, which will be increased to 7 or 8 tons during the present month. This ore is all taken from below the 400 ft. level, and 600 ft. and 800 ft. level. The false level being driven below these points shows a dipping west the prospect for cutting it in this level is good. I am engaged in the false level, and will connect the 400 ft. level immediately above the heading of the false level, and will connect the two levels by winze as soon as possible; this will open up 10 ft. of ground here, before unexpected, besides giving ventilation to that portion of the mine. The heading of the 300 west is still in broken ground;

am sinking winze below this level, which shows a little fine ore. The winze below the 400 ft. level also shows a small quantity of milling ore.

**SIERRA BUTTES.**—Result of the working at the Sierra Buttes and Plumas Eureka Mines for September:—Sierra Buttes Mine: Receipts, \$28,161; cost of mining and milling, \$21,280.—Plumas Eureka Mine: Receipts, \$27,813; cost of mining and milling, \$12,868.—[As explained at the general meeting, on Oct. 8, the clean-up at the Sierra Buttes Mine for September is less than usual, owing to the stoppage of the 40-stamp mill half the month for repairs to the water-wheel, and also to ore of a lower quality having been crushed. The agents telegraph that the prospects are better for October.]

**COLORADO TERRIBLE LODGE.**—Oct. 16: The agents advices to date Sept. 21, enclose railway receipts for the 49th, 50th, and 51st, shipment of ore. Cash received by the agent from the Stewart Reduction Company for second class ore sold \$6099. On Oct. 6 356 bags of ore arrived in Liverpool, per City of Brussels. There are now five shipments (including the 47th) awaiting sale in Liverpool, and four other shipments are en route. The 52nd shipment was to leave on September 23.

**INDEPENDENCE GOLD QUARTZ.**—The monthly cable gives the following as the result of the September working:—Tons of quartz crushed, 1000; gold produced, \$8000; mining, milling, &c., \$4000; leaving a profit of \$4000, or 800%, of which 400% was spent during the month on capital account and winter supplies.

**MALABAR.**—G. B. O'Reilly, Sept. 9: Mine: Since last writing to the board there is no material change in the ground, but as we are now rather more open, and not advancing so rapidly over the pipe-clay, we have had a better chance to wash, and can now do so occasionally, even when the ponds are working in the morning. The pond over the pipe-clay is now one or two ponds allowed to run in former minutes, the ditch has given us no further trouble, and has furnished a constant and very large supply of water. We have never had less than 1500 in. to work with.—Clean-up: On or before the 18th inst. we intend to clean-up the undercurrent and 750 ft. of sluice (all our sluice). In future we shall probably clean-up every two months, as with our large sluice and under-current, and heavy blocks, the task of doing so is serious, and stops work for four or five days. We are sanguine of obtaining a fair result, in spite of our low banks and the vast quantity of unproductive stuff we have had to run off. The board shall be advised of result by the mail of the 20th if possible, and the bar of gold (including last clean-up) will be forwarded to London through Panderford and Jewry.

**RICHA.**—W. S. Welton, Aug. 25: New Ditch: A line has now been run from the head of the present ditch to the San Jose Quebrada; the distance measured six miles; the ground over which the line was run consists partly of steep rock, and there are so many slides that one-third only of the distance can be considered fair ground; one-half would require flumes and support for the sides of the ditch, and much rock would have to be blasted. The water contained in several small streams found amounted to 48 inches, and in the San Jose Quebrada 300 inches, making a total during the late dry weather of 348 inches. At a short distance beyond the San Jose Quebrada a considerable amount of water can be obtained from the Anaconda Ditch Quebrada if required. The ground at some distance above the line run appears much better, and before deciding on opening the new ditch I think it advisable to run a fresh line. The point at which water would be taken from the San Jose Quebrada is so near the Guali river that a lower ditch in place of the present one would take a supply from the Guali itself. I mention this that the board may note that a supply equal at least to twice the amount of water contained in the Medina river may be obtained if the shareholders resolve to supply the necessary funds.

**NEWFOUNDLAND.**—J. Nancarrow, Sept. 30: Having just come up from underground, I beg to send you my report on the above mine. Cooper's shaft is sunk below the 10 fm. level 9 fms. 2 ft. 6 in.; the lode in the bottom of the shaft is wider than I have before seen it, and will produce fully 1½ ton of lead ore per fathom, and is being sunk, by six men, at \$120 per fathom. You will see we have 3 ft. 6 in. more to sink to reach the 20, when drives east and west will be commenced as soon as possible, which I fully think will open out good and profitable ground. The 10 fm. level is being driven east of Cooper's shaft, by six men, at \$55 per fathom, in a lode 4 ft. wide, which looks very promising, though at present not producing much lead to value, but since my last it has yielded at times from 2 to 2½ tons of lead per fathom.

The 20, east of McConchie, is being driven by four men, at \$55 per fm., in a lode 4 ft. wide, which has greatly improved in appearance in the last few days; and, though it is unproductive at present, I look for improvement here shortly. We are sinking and stopping below the 10, east of McCoy shaft, by six men, on a lode worth from 3 to 4 tons of lead per fathom, but the ground is rather hard and spare for progress. Should this continue as at present it will open out a rich piece of stopping ground when we reach the 20. There is no change worthy of remark in the deep adit end, east of Doctor's shaft: the lode is about 4 ft. wide, of a very promising appearance, and producing good stones of lead occasionally.

Capt. Bradley with myself have just agreed to cut down and sink Keley's as a good permanent shaft for prospecting and further development of the mine, it being in a good position, having several advantages beyond the other shafts. Having now dressed the accumulated stuff, we shall in a few days be able to put several more men underground to break lead. We have now dressed (wet weight) 165 tons of lead—No. 1 quality, 148 tons; No. 2 quality, 17 tons; total, 165 tons. We are expecting a vessel at the wharf every day to ship the lead, meantime we are using every exertion we can to get as much lead as possible. All machinery is in good working order. Ground excavated during the present month 15 fathoms.

**CHONTALCO.**—Mr. Smiedle, Sept. 5: The quantity of ore treated during the past month has been 1304 tons, from which we have obtained 227 ozs. of gold, being an average of about 3½ dwts. per ton. We value the gold at 644.; the total cost has been 626., leaving a profit of 8. I am glad to inform you that the whole of the damage caused by the late floods has been repaired, with the exception of No. 2 level in San Sebastian Mine, with which we are now engaged. This will not materially affect the produce of ore, and I hope during the present month we shall be able to keep the mill fully supplied. The weather is much more favourable.—San Benito East: In the last end driving towards the old workings the lode is about 6 ft. wide, and worth about 4½ dwts. per ton; in the west end the lode is about 5 ft. wide, but at present poor; the quantity of ore extracted has been 366 tons.—San Sebastian: I am sorry to say this mine still continues poor. I am pushing on No. 1 level eastward, and have hopes that it will yet improve; the whole of the lode about 18 ft. wide in No. 3 level. I am driving on the course of the lode in the same direction; the width is about 4 ft.; the quantity of ore extracted has been 400 tons, and the yield about 2½ dwts. per ton.

**Santo Domingo:** We have been occupied during the greater portion of the month in re-opening the cross-cut. This has now been completed. In the western end the lode is about 4 ft. wide. In the eastern part of the mine we are going through a run, but expect to get into the face by the end of the present month. The quantity of quartz reduced has been 162 tons, and the yield about 4 dwts. per ton.—Estrella: We are still driving on the course of the lode, which is about 6 ft. wide, and worth about 18 dwts. per ton. The quantity of quartz reduced has been 366 tons, and the yield 3½ dwts. per ton. From the old heap we have reduced 61 tons, which has yielded about 5 dwts. per ton.—Machinery: We have received the shoes for the new stamps, and I am informed that other portions have been landed at San Ubaldo. The repairs to the old engine are nearly completed, having been fitted with new brasses and eccentric straps, which we have cast here.

**CAPE COPPER.**—Returns for August: Ookiep, 765 tons of 32 per cent.; Spectacle, 62 tons of 27 per cent. Railway traffic for six weeks ending Sept. 5, 448 tons up and 960 tons down.—Bills of lading received: 220 tons of ore per Nyanza and African steamers, 210 tons per Syria, 207 tons per Danube, and 300 tons (partly of the same quality) per the Tamesa and Gilpin.—Arrival at Port Nolloth: The Ocean King, Hendrik, and Antonio Vinken to load together about 1650 tons of ore.—Sales by public ticketing: 393 tons of ore No. 22, at an average of 15s. 9d. per unit, realising approximately 8280.; and 408 tons of ore No. 6, at an average of 16s. 13d. per unit, realising approximately 10,450.—Put forward for sale by public ticketing: 500 tons of ore on the 20th instant.

**LUSITANIAN.**—Oct. 6: Palhal: The lode in Taylor's engine-shaft and in the stope above the 170 is now being taken down, and the shaftmen have begun to drive the 180. In No. 96 winze, below the 70, east of River shaft, the lode continues in two branches, neither of which has any value. In No. 97 winze, below the 38, east of the lode, the lode is 2 ft. wide, and given small stones of lead. About a week ago we cut a stream of water here, which was more than the men could keep under with the tackle; it is coming from the branch lode, we shall probably try it again to-morrow.—Levels on Basto's Lode: In the 180, east of Taylor's, the lode is 10 ft. wide, composed of quartz, mundie, and spots of ore; and in the 180 west, of the same width, composed of quartz and spots of ore. The lode in the 170 west is worth ¾ ton of ore per fathom. The lode in the 150 east is 4 ft. wide, composed of quartz. The 140 west is suspended; the lode here is 6 in. wide, made up of flookan and quartz. East of the River shaft, in the 120, the lode is 1½ ft. wide; and in the 110, east of 2 ft. wide, composed of country and flookan. In the 90 east, east of 3½ ton of lead ore per fathom, and in the 70 east ½ ton of dirt. The lode is 5 ft. wide in the 28 east, of no value. The slide lode north-east of Taylor's, at the 130, is 1 ft. wide, of quartz and flookan, letting out water; this driving is now suspended. The ground is rather harder in the adit cross cut, south of the branch, west of Perez shaft. The stopes throughout the mine continue to yield fairly. At Carvalhal the cross cut at the 60, south of incline shaft, is rather harder and dryer. We have driven through some small branches of spar, but there is none in the end at present.

**LINARES.**—Oct. 7: Pozo Ancho: In the 100, east of Warne's engine-shaft, the lode is very open, and yields 1 ton of lead ore per fathom. In the same level west the lode yields 2 tons per fathom, and is large and strong. The lode in the 85, west of Crosby's shaft, is small and poor. In the same level, on south lode, there is a compact and regular lode, yielding 1 ton of ore per fathom. The 75, west of Crosby's, is in a very open lode, containing a few spots of ore. The 75, west of San Francisco, is opening up good stopping ground, worth 1½ ton per fm. The same level east is in a small lode, yielding ½ ton per fathom. In the 65, east of San Francisco, the ground is hard, and the lode unproductive. The same level west is opening moderately productive ground, worth 1 ton per fathom. In the 55, west of San Francisco, the lode is failing, present value ¾ ton per fm. The lode in the 55, east of this shaft, is small and unproductive. In No. 169 winze, sinking below the 45, the lode is failing, now worth ½ ton per fathom. No. 191 winze, below the 75, is going down in a productive lode, worth 1 ton per fathom. The estimated quantity of ore was raised in the past month, and the stopes are looking much as usual. The surface work is going on with its usual regularity, and the machinery in good working order. We estimate the raisings for October (five weeks) at 150 tons.—Los Quinientos: The 80, west of Taylor's engine-shaft, is in a large and strong lode, yielding ¾ ton per fathom. The men of the 65, west of this shaft, are driving a cross cut north with the expectation of letting down the water in Cox's shaft. The lode in the 45, west of Cox's shaft, is large, and the ground favourable for driving through. In the 60, east of Taylor's, the lode is large and strong, yielding ¾ ton of ore per fathom. The ground in the 65, east of Taylor's, has improved since last report. In the 55, east of Addis's, the lode is small and poor. In the 55, west of San Carlos shaft, the lode is composed chiefly of quartz and lead ore, value 1 ton per fathom. The lode in the 65, west of this shaft, is small, and the ground hard. The same level east is in quite unproductive ground at present. The 55, east of Judd's shaft, is opening moderately productive ground, worth 1 ton per fathom. The lode in the 45, east of this shaft, is small, yielding a little ore, but not to value. The 32, east of Judd's, which is worth ½ ton per fm., is sinking below the 45, the lode is failing, now worth ½ ton per fathom. San Carlos engine-shaft, below the 65, continues hard and spare for sinking. Addis's shaft, below the 55, will reach the required depth for the 45 by the end of this week. In Pablo's winze, below the 55, the lode yields 3 tons per fathom, and the ground is favourable. The lode in Diego's winze, below the 55, is failing, now worth 2 tons per fathom. Gill's winze has been commenced to sink below the 32,

east of Judd's shaft, in advance of the 45 fm. level end, the lode is worth 1½ ton per fathom.

**ALAMILLOS.**—Oct. 7: In the 30, west of San Frederico shaft, the lode is looking rather better than it has done, now worth ¾ ton per fathom. The lode in the 50, west of this shaft, is large and strong, yielding stones of ore. The 50 cross cut, north of La Magdalena, continues in hard ground. The lode in the 85, east of Taylor's engine-shaft, is large and vughy, producing ½ ton of lead ore per fathom. The 85, west of this shaft, also yields ½ ton per fathom. In the 50, east of San Victor shaft, the lode is small and ground hard. In the 50, east of San Carlos shaft, there is a good stone of ore in the bottom of the end. The lode in the 50, east of Judd's, has failed very much of late, and yields ½ ton per fathom. In the 60, east of Judd's, the lode is small and poor. There is no improvement in the 40, east of air shaft. In the 50, east of Crosby's, the lode continues unproductive. The lode in the 20, west of Swaffield's shaft, is very much disordered. In the 30, east of this shaft, the lode is small and compact, yielding ¾ ton per fathom. The same level west is opening out good tribute ground; the lode has improved to 1½ ton per fathom.

In San Adriano's shaft, sinking below the 75, the men are working regularly. San Victor's engine-shaft, below the 50, is off the lode. Good progress is now being made in Judd's engine-shaft, below the 60. Morris's shaft is going down below the 40 in a very regular lode, yielding 1½ ton per fathom. In Julian's winze, below the 75, the lode is large and productive, yielding 2 tons per fathom. The lode in Joaquin's winze, below the 30, is of a promising appearance, and produces 1½ ton per fathom. In Blas's winze, below the 30, the lode is unproductive. The stopes yielded the estimated amount of ore in the past month, and are looking much the same as usual. The machinery throughout the mine is in good working order. We estimate the raisings for October (five weeks) at 250 tons.

**FORTUNA.**—Oct. 6: Canada Incoosa: In the 110 cross-cut, north of Judd's shaft, there is no change since last report. Nothing has yet been met with in the 80 cross-cut, south of Henty's. In the 50, west of San Pedro, the lode is small, and the ground is hard. In the 60, west of this shaft, the lode is small and poor. In the 60, east of San Pedro, there is a large lode, composed of spar and lead ore, worth ¾ ton per fathom. The lode in the 60, east San Frederico shaft, has improved, and is letting out more water; the present value is 1 ton per fathom. The 40, east of this shaft, yields 1 ton per fathom. In the 80, west of Kennedy's, the lode is a little larger than it was, with good spots of lead in it. The lode in the 90, east of this shaft, is not quite so large as it has been, now worth ¾ ton per fathom. In the 85, east of Segura's, the lode has improved, and has a promising appearance, yielding 2 tons per fathom. The ground at Judd's shaft, sinking below the 100, is hard. In sinking San Frederico shaft below the 50 good progress is being made.

**Los Salidos:** The 110, west of San Carlos shaft is in a compact lode, yielding 1 ton of ore per fathom. In the 90, west of this shaft, the lode is small, and the ground hard. The 120, east of Morris's engine-shaft, is in a large strong lode, containing a little lead, but not enough to value. The 110, east of Cox's shaft, has further improved, and is opening a rich piece of tribute ground, worth 2½ tons per fathom. The 100, east of San Miguel, yields 1 ton per fathom. The lode in the 45, west of Palgrave's engine-shaft, is regular, yielding good stones of lead ore. In the 45, east of this shaft, the lode has failed to 1 ton per fathom. The 35, west of Swaffield's shaft, is in a small and compact lode, yielding ¾ ton per fathom. In the 25, west of this shaft, the lode is again disordered. In Buenos Amigos engine-shaft sinking below the 110 fair progress is being made; the shaft is off the lode. The lode in Palgrave's engine-shaft below the 45 is not quite so good, yielding at present 2 tons per fathom. Swaffield's shaft below the 35 is yielding 2 tons per fathom, and is in a very promising lode. Londres winze below the 100, east of Cox's, yields 3 tons per fathom. Oribe's winze below the 35, west of Palgrave's engine-shaft, is going down in a splendid lode, producing 4 tons per fathom. Mariano's winze below the 100, west of San Carlos shaft, yields ½ ton per fathom; the lode has failed in value, and the ground is very hard. In Ricardo's winze below the 35, east of Palgrave's, there is a small branch of lead, but not enough to value. The rate of raising of ore was well maintained in the past month, and the stopes are now, on the whole, looking moderately well. The surface work is going on very regularly, and the machinery is in good working condition. We estimate the returns for October at 400 tons.

**LANESTOSA.**—Oct. 6: Asuncion: In Judd's shaft, sinking below the 60 metre level, the lode is 5 ft. wide, chiefly calcareous spar and clay matter, with a little calamine and lead. In the 60, north of Judd's, the ground is disordered, and the lode is small. This is suspended to bring down winze at end of ore. The 60 south is passing through a cross-course, which has cut off the lode. A ventilation winze is commenced below the 60 south, to carry down air to new bottom levels; the lode is 6 ft. wide of hard calcareous spar, spotted with lead. In No. 1 winze below adit north, the ground is disordered, and there is no sign of a regular lode in bottom. No 2 winze below adit south is down to back of 60, and suspended; lode in bottom large and promising, with pockets of lead through it. In the intermediate levels, north and south of No. 2 adit winze, started at bottom of ore seen in winze; the lode is improving in ends, and ore is seen dipping in a vein of lead, and lode undisturbed, which appears to join the main lode, the yield is 1 ton lead and 1 ton calamine per fathom. The trial level north from No. 2 stopes, in the back of adit south, is worked out. No. 2 stopes in same level is suspended, the lode being very small and unprofitable. In No. 3 stopes, in back of adit south, the ore ground has shortened very much, it is worth 1 ton lead and 1 ton calamine per fathom, and will be taken away by middle of month.

In the 20 north the ground is easier, and carries loose blocks of lead in an earthy vein, value ¾ ton per fathom. In No. 1 stopes, in back of the 20, the vein is improving, but the ground continues hard; the yield is 1 ton of lead ore per fathom. In a trial level north, on the west side of stopes, started to prove a vein of lead going off west, which appears to join the main lode, the yield is 1 ton lead and 1 ton calamine per fathom. The trial level north from No. 2 stopes, in the back of the Cave level, has been suspended, having reached the crushed ground near the ancient workings. The rise in the back of the Cave level has been suspended, it having intersected hard barren floors of calcareous rock, without much sign of lode. The raisings for the present month will be very uncertain, being dependent upon the yield of levels from No. 2 winze and 80 metre stopes, and the continued shortening or otherwise of No. 3 adit stopes. Without material change it is estimated that the sampling will reach 30 tons of lead and 40 tons of calamine, &c.

## ECHOES FROM THE MINING MARKET.

Foreign mine shares have absorbed the principal attention of the market during the past week. Consequent upon one or two important meetings having been held, the course of events has been watched with much interest by speculators, and a good many shares have changed hands. In the other markets we note an improvement in tin shares, and the further strengthening of copper stock. An advance of 2½ has been announced in the ore standard of the former, and the intimation has been hailed with joy by all those interested in the welfare of our Cornish mines. Whether the advance is likely to be of a permanent character, and to lead to further advances in the tin share, is a difficult matter to say with any certainty. Exhaustive statistics to the contrary notwithstanding, the most that can be said is that it is a move in the right direction, and encouraging at such a time as the present.

Colliery shares still continue to hold their own, but a feeling is growing that the dividends to be declared within the next two months will not be so good as those paid during the first six months of the year. We think this will certainly be the case with one or two companies, and could name one in particular, now commanding a large share of attention; but we are of opinion that generally the dividends will be found to be up to the mark. During the past few months there have been no important disturbing influences to militate against profits, wages have been pretty fair, iron and other materials receding in value, and the heavy part of the year for orders is coming on. Therefore, investors have not much to be afraid of, so long as they take care that the property they invest in is in a sound condition, and its shares easily dealt in. Transactions are reported in Richards and Co. (a new colliery undertaking) at ¼ prem.

Shareholders



## Mining Correspondence.

## BRITISH MINES.

**ABERDAUNANT.**—8. Toy, Oct. 14: In No. 1 adit, driving east, there is no change to notice for the last week, still producing some saving work for dressing, and of a very kindly appearance. No. 4 stope over this level is worth 13s. per cubic fathom for lead. All surface work is being pressed on, and our machinery is in good working order.

**ASSHETON.**—M. H. Whitford, Oct. 14: The lode in the 50 is very large, from 5 to 6 ft. wide, and will yield from 12 to 15 cwt. of lead per fathom; we have 2 to 3 fms. more to drive to get under the course of lead in bottom of the 40; this being driven, we shall at once cut through the lode, and have no doubt but what a course of ore will be met with. The lode in the winze below the 40 will yield from 4 to 5 tons of lead per fathom. The stope west of No. 1 winze, in back of the 40, will yield 1½ ton of lead per fathom. The stope east of No. 1 winze, in back of the 40, will yield 2 tons of lead and blende per fathom. The lode in the 40, west of Browne's, will yield 2 tons of lead per fathom, and in our opinion will improve. The stope in back of this level will yield 3 tons of lead per fathom. The lode in the winze below the 30, west of Browne's, is poor at present. The lode in the stope in back of the 8 will yield 1½ ton of lead per fathom.

**BAMFYLDE.**—S. Mitchell, H. T. Haley, Oct. 13: Everything is progressing satisfactorily at the copper mines. All the stopes at the 102 are equally good as last reported. All the other points of our operations are looking well, in fact, the mine never looked better. We have also resumed operations at the 112, fixing stulls, &c., preparatory to stopping the ore. This being done, we shall proceed to drive the level as fast as possible to get under the ore ground gone down in the 102 fm. level. There are good stones of ore in the rise at the 70 east, and the nature of the ground in the cross-cut south at the 40 is congenial for the deposit of ore in the lode before us, and it contains good stains of green carbonate of copper ore. Good progress is being made in the western adit at No. 3 shaft. We are getting on as fast as possible with the dressing of the copper ore.—Stowford Iron Mine: We hope to hole the lobby to No. 2 shaft in the course of another week, when, with the exception of re-timbering a place or two in the level, we shall have a good length on the lode unwatered. We have not reached the lode in the cross-cut east of No. 4 shaft, but the ground is congenial for the production of iron, and favourable for driving. The north lode in Stowford Hill, driving west, is improving, being now about 3 ft. wide.

**BEDFORD CONSOLS.**—George Rowe, Joseph Mitchell, Oct. 14: The lode in the 67 west is over 7 ft. wide, of a most promising description, yielding very strong mundle and fine rocks of ore, intermixed with spar; it is, altogether, of an improved character, and is going towards the big cross-course. The lode in the drive east is without change since last reported on. All the machinery throughout the mine is in good working condition.

**BEDFORD UNITED.**—W. Phillips, Oct. 15: The lode in the different levels will be taken down next week, and the size and value given. The stopes are looking much the same as for some time past.

**BELSTON.**—James Neill, Oct. 10: A shaft: The shaft is now being sunk below the 71 fm. flat, by nine men, and will be forced on with all speed; the shaft at present is 3 fms. 0 ft. 4 in. below the 71. The stope from rise in back of intermediate level east, on small cross-course, has improved within the past week; the ground is very congenial for the production of copper ore, large nests of which are being met with. Machinery at surface and underground is all in good working order.

Oct. 14: The stope from rise in back of intermediate level east is still looking very well; the raising of ore this week will exceed that of last. The sinking of shaft is now going on without any interruption, and will be forced on as fast as possible.

**BRONFLOYD.**—J. Davis, Oct. 14: There is no material change here this week. The delay in getting the new jaw for the machine is vexing, but I hope it will be here soon. We are now getting some fine but small ribs of lead ore in the cross-cut north of the 40 west, and the ground improves in character. I shall send a truck (8 tons) of ore over the wire tramway on Saturday.

**CAEYKNO.**—T. Hodge, Oct. 13: In the 50 north cross-cut we are now into country rock; we have passed branches containing small ribs of ore for the last 9 or 10 ft.; this is a third of the lode's width, and the progress in sinking will be continued another few feet. Good progress is being made in driving the 70 east, and from the appearance of the end to-day I think we are near the junction of the lodes.

**CARGOLL.**—J. Grose, R. Tyszer, Oct. 13: Doctor's engine shaft is sunk 5 fms. below the adit level; the lode continues about 3 ft. wide, and is producing good dredge stones of lead, interspersed with rich copper ore, which we like to see associated with lead at a shallow level; but during the past week the kilas has been stiffer than heretofore, consequently we have not made the progress in sinking that we expected. The adit level is without any change to notice. The engine is working well, and we are effecting a saving in coal, as the house is being closed up.

**COURT GRANGE.**—Capt. E. Dunkin, Oct. 15: The 30 fm. level is now in fork; I have not examined it yet, but will report on it next week. The lode in the 16 maintains its value as reported on the 8th inst., but the men are making rather slow progress in stripping it down, owing to its being so full of fissures, in which the powder blows away frequently. We have opened it 4 ft. wide, and throughout the width is mixed with lead, and in going eastward appears improving. This looks well for the mine, as east of this is whole ground, and doubtless will prove equally as productive as the part that has been extensively worked. The lode in New Brogan is more productive of blende than before, and the ground appears to be undergoing a favourable change. Good progress is being made in the sinking of this shaft. Surface operations are advancing regularly and speedily; the stands, launders, and watercourse are completed, and the men are busily preparing the winding-machine, pulley-stands, &c., for hoisting stuff from the main engine shaft. I am well pleased with the work done in the past week.

**GREYER AND WHEAL ABRAHAM UNITED.**—W. Thomas, J. Hamill, Oct. 14: Setting up the Engine-shaft. This shaft is suspended for the present, and the men put to drive the 22nd west shaft, at 17. per fathom; the lode is 1 ft. wide, occasionally yielding stones of copper ore, and we expect an improvement as we are approaching the ore ground gone down in the bottom of the 21s. To drive the 22nd east, by four men, the month, at 12. per fathom; the lode is 1 ft. wide, and yielding a little mineral. To drive the 21st west, by six men, the month, at 17. per fathom, where the lode is 2 ft. wide, yielding copper ore to dress. To sink a winze in the bottom of this level, by six men, the month, at 15. per fathom; the lode is 2 ft. wide, yielding 2½ tons of copper ore per fathom. To drive the 20th east of shaft, by two men and two boys, at 14. per fathom; the lode is 1½ ft. wide, yielding stones of rich grey copper ore.—Greener Shaft: To drive the 140, west of rise and east of shaft, by three men and three boys, at 8. per fm.; the lode is 1½ ft. wide, producing stamping work for tin. Bull's shaft to sink below the 180, by six men, the month, at 14. per fathom, where the lode is 1½ ft. wide, yielding a little copper ore.—St. George's Shaft: We have taken the men from the 203 end, and put them to rise in the back of the level against the winze sinking below the 180, by six men, the month, or hole, at 10. per fathom; the lode is 2 ft. wide, yielding 1 ton of copper ore per fathom. To sink the lode in the 180, on the south lode, by six men, the month, at 12. per fathom; the lode is 2 ft. wide, yielding 2½ tons of copper ore per fathom.—Woolf's Shaft: To sink below the 208, by nine men, the month, at 32. per fathom; the lode is 3 ft. wide, yielding 3½ tons of copper ore per fathom, being now down 6 fms. 2 ft. below the level. To drive the 208 west by three men and three boys, at 11. per fathom; this end is still in the cross-course, but we think we shall get through it in a day or two. To stop in the back of the 208, west of shaft, by six men, the month, at 6. 10s. per fathom; the lode is 2½ ft. wide, producing 3 tons of copper ore per fathom. To drive the 120 cross-cut, south of Woolf's shaft, by four men, the month, at 10. per fathom; the lode is 2 ft. wide, and the ground is much better than in the 208, and is much more worthy to be remarked on.—Vivian's Shaft: To drive the 220 east, by six men, the month, at 12. per fathom; the lode is 2½ ft. wide, and produces 1 ton of copper ore per fm., and has a favourable appearance for further improvement.—Pelly's Shaft: We have put the shaftmen to drive the 248 west, at 20. per fathom; the lode is 1½ ft. wide, and producing stones of copper ore and a little tin. To drive the 248 east, by six men, the month, at 18. per fathom; the lode is 1½ ft. wide, having a great deal of spar in it. To drive the 234 east, by six men, the month, at 14. per fathom; the lode is 2 ft. wide, yielding good stones of copper ore; this end has very much better appearance than the 220, and is much more worthy to be remarked on.—Blewitt's Shaft: To drive the 234 west, by six men, the month, at 8. per fathom; the lode is 1 ft. wide, yielding good stones of tin, and we anticipate an improvement here shortly, as we are near the tin ground driven through in the 220. The men in the 220 have put to rise in the back of the level against Richard's shaft, by eight men, the month, at 10. per fathom; the lode is 5 ft. wide, producing 3 tons of copper ore per fathom; there will be no time lost in getting the shaft down to this point, which is of considerable importance. To rise in the back of the 210 against Richard's shaft, by six men, to hole, at 11. per fathom; the lode is 3 ft. wide, and is yielding 1 ton of copper ore per fathom; we expect to communicate this rise to the shaft in a few days.—Richard's Shaft: To sink below the 200, by nine men, the month, at 12. per fm.; the lode is 3 ft. wide, yielding copper ore to dress. To sink a winze below the 200, west of shaft, by six men, the month, at 9. per fathom; the lode is 4 ft. wide, yielding 1½ ton of copper ore per fathom. To drive the 200 end west, by six men, the month, at 6. 10s. per fathom; the lode is 4½ ft. wide, yielding 3½ tons of copper ore per fathom, and letting out a large stream of water. No. 1 rise, in the back of the 170, west of shaft, by two men and two boys, at 7. per fm.; the lode is 2 ft. wide. To drive the 140 west, by two men and two boys, the month, at 5. 10s. per fathom. We have put the men who were driving the 70 cross-cut, at Gard's shaft, to drive the 140, west of Richard's shaft, which is very near being under William's shaft. There are employed this week on tutwork 164 men and boys; on tribute, 76 men and boys; at surface, 56 men and boys; total, 296 men and boys.

**CWM DWYFOR (Copper and Silver-Lead).**—J. Jewell, Oct. 15: The lode in No. 1 level, driving east of the cross-cut, is producing good stones of copper ore, iron pyrites, &c.—A very strong and kindly lode. This lode is in No. 1 level, driving east of the south cross-cut, is 3½ ft. wide, producing rich lead and copper ore; the rock is now of precisely the same congenial character as we have it on the stope east and west of the little shaft, on this lode, which are producing 1 ton of lead and 1 ton of copper ore per fathom.

**CWM ELAN.**—W. Goldsworthy, Oct. 10: No change has taken place in the 20 since last report; the lode is still maintaining its very encouraging appearance in each end. The men have been most of their time this week clearing their stuff; consequently the drive is short. Our machinery in general works well.

**DE BROKE.**—T. Hodge and Son, Oct. 13: Wilson's shaft is below the surface about 3 fms., and secured so far with timber; we have now getting down into settled rock, and hope another set of timber will be all we shall require. In No. 3 shaft we have stripped down the lode in the 25, west of junction shaft, about 9 fathoms, at which point the lode is wide, and worth 15 cwt. of lead per fathom; the lode in this part of the mine is standing whole to surface, and on Saturday next we intend to set a rise to go up in the heart of the bunch of ore. In No. 2 shaft there is no change in the stopes; they continue to yield fair quantities of ore. At surface everything is being pushed on with the utmost dispatch, and we hope to sample another parcel of 12 tons on the 26th inst.

**DEERPARK.**—John Goldsworthy, John Bunnell, Oct. 10: The sinking of the engine-shaft below the adit is being forced on with all speed; the stratum is a light-blue clay-slate, strongly charged with mineral. The branches referred to in our last are widening as the shaft deepens, and are still dipping south; they are composed of blende, quartz, mundle, and copper ore of a most promising description. The water has also increased. We regard the above as most favourable indications. The machinery throughout the mine is in good order, and works well.

**DENBIGHSHIRE CONSOLIDATED.**—John Pryor, Oct. 14: In the 112 east

the lode is 3 ft. wide, and much easier to drive. The shale beds are disappearing, and there are large patches of lead in the driving coming in, so that I expect soon to send you very good news. The 112 west is showing a rib of ore 2 in. wide and 4 ft. high; a good quantity of water is coming in, which is a first-rate indication. In the 60 west we are looking well. No other change, every other operation proceeding most satisfactorily.

**DUNSEY WHEAL PHOENIX.**—W. Skevis, W. Richards, Oct. 9: You will, no doubt, be pleased to learn that we yesterday made a thorough inspection of the mine, and set bargains to winch shaft men. As regards the lode in the cross-cut at the 47 (whim-shaft), it is no larger than reported on last week—between 7 and 8 ft. thick, and we think there are no more branches belonging to this level. We have driven about 7 feet in granite. In cross-cut beyond main lode, with no more indications of lode; set at 5 ft. bargain to shaftmen, to ease and divide shaft to bottom, and to fix penthouse to prepare for sinking; also to sink shaft 10 fms. at 20. per fm., and if completed in five months from 17th of this month to receive 10. premium. For some few fathoms driving was split in two by a horse, and somewhat disordered. The men have a steady task; they must work very smart to do it in the time. In the deep adit level, driving west of cross-cut, on course of lode; the lode, which is now forming itself into a large body of stone, and I think after driving a few fathoms more west that we shall have a nice compact lode here. Some of the lode was taken down yesterday, and although we could not see tin in the stone we did see plenty of lead, capricious, and mundle, which are sure indications of tin; but it is possible we may have to drive beyond the kilas into the granite country before we meet with a very good lode, and the granite cannot now be a great many fathoms away. We hope we may soon meet with it.

**DYLLIFE.**—E. Evans, E. Rogers, Oct. 10: The 120 is driven north of Boundary shaft 19 fathoms 1 foot 9 inches, and is set to six men, to cut the lode, at 7. 15s. per fathom, and if done within eight weeks from this time to be allowed 2. prem. At the 105 there is a stope working, by six men, at 4. 5s. per fathom; the lode is worth 25. per fathom. The 60 is driving east, by six men, at 7. per fathom; the lode is 3 ft. wide, a mixture of copper, blende, and a little lead ore. At the 40, driving east, the lode is worth 8. per fath. n., and judging from its present appearance, we expect a further improvement within a short distance. At the 25, west of old engine-shaft, we are stopping the bottom of the level, by twelve men, at 4. per fathom, in order to unwater this shaft, which will enable us to let some profitable ground in the back of this level. At the 15, east of old engine-shaft, the lode is yielding some rich stones of lead ore, but not enough to value. We consider we are not carrying all the lode, and have therefore commenced to cross-cut, by six men, at 7. 10s. per fathom. Esgriged Lode: At the 45 there are six men stopping the back, at 1. 8s. per fathom; the lode is producing some stones of lead, but we expect an improvement as we go up, as there is a rich lode in the winze sunk a short distance below the 35. In our tribute department there are 20 men employed at 5. per ton, and 10 men at 5. 10s. per ton.

**EAST CHIVERTON.**—R. Southley, Oct. 15: Last Saturday being our usual setting day, the following bargains were taken:—The 64, to drive west on the course of the lode as much as they can drive for the month, at 2. 10s. per fathom; no alteration in the lode since last reported on with the exception of letting out more water, which we hope will lead to an improvement shortly. The cross-cut, to drive north at the well-known copper lode for the month, at 1. 15s. per fathom; progress is being made here. The ground which we are passing through is very congenial for the production of mineral. The 52, to drive east on the course of the lode, for the month, at 2. 13s. per fathom. Since my last the men have been engaged timbering the level, consequently not much had been done in the end before Monday last, when the men resumed the drive, which they are pushing forward with all speed. The lode is full 4 ft. wide, and looking exceedingly promising for the production of lead. Our machinery and pitwork are in good condition.

**EAST WHEAL BASSET.**—R. Pryor and Son, E. Adams, Oct. 14: The lode in the 50, west of shaft, is 2 ft. wide, and is producing good stones of lead, and the men are making good progress in collaring and securing the south shaft. No time will be lost in communicating this shaft to the 30, when we shall be at once able to set several additional pairs of men to work at this level, also to put out a cross-cut south to cut the three other lodes seen in the adit level, which are all in whole ground. Friday next being pay and setting day a full report shall follow.

**EAST WHEAL GRENVILLE.**—E. Hosking, W. Bennetts, Oct. 10: Setting Report: To drive the 130, west of engine-shaft, by six men, at 4. per fathom; the lode is 2½ ft. wide, and worth 7. per fathom. To drive the 120 cross-cut, north of the 50, to drive east of the 50, by six men, at 9. per fathom; the lode is 8 to 10 ft. wide, and producing the usual quantity of tin and arsenic. The 80, to drive west of Phillips's shaft, by four men, at 10. per fathom. We intend to cut here, to find the north part of the lode. A winze to sink in the bottom of the 74, on the south lode, by six men, at 14. per fathom. By sinking this winze we shall communicate with the cross-cut driving south of Phillips's shaft, and which accomplished we shall have laid open a fine piece of rich tin ground. At Broadgate we are fixing the balance-bob. We have completed the new crushing mill house, and the engines are busily engaged in getting in the engine. All other surface work is going on satisfactorily.

**FLORENCE CONSOLS (Tin).**—P. Skewis, Oct. 14: We continue to make progress. Early last week we had cleared out and repaired the Chiverton shaft and footway sufficiently to make a thorough examination; we were surprised to find that the former workers must have been driven out in haste through being overpowered by the water, which we have completely drained off. We found at and down to 15 fathoms from surface extensive workings, and at this depth there is a level driven on the lode (which is 2 ft. wide) about 33 fms. south-east and about 2 fms. north-west, and a cross-cut going north-east 4 fms. through the country, apparently to reach the well-known copper lode for which we are driving at the 60, at Walter's and Eliza's shafts, and about 10 fms. from the south-east end of the level on the lode we found the lode split, either by a horse or a branch lode going nearly east, on which they have driven only a few feet. A good part of the backs were still standing ready to be removed as soon as we can clear up the floors, and we at once set men to work at both ends, and are now sending some good tinny stuff to the stamps; all the lode yields tin, and some 18 or 20 samples have been assayed—one of these yielded over 5 cwt. of tin to the ton, one other yielded 3 cwt. to the ton, the others varying from 12 to 30 lbs. to the ton, and we think the average will be about 25 lbs. to the ton for the whole lode. We are still sinking, and have not yet come to the bottom of the old works; the lode appears to increase in size and value as it goes down. About the latter end of last week we also intersected the north lode at the 40, from Eliza's shaft, where it is 17 in. wide, and assays about 19 or 20 lbs. to the ton, which will no doubt improve as we sink deeper. 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**CORNISH MINE HARE MARKET.**—The share market has been a little more active during the week, and more business has been doing. There is now a better demand for tin shares at slightly higher prices. On Monday a large order was done in the London market in Straits and Australian 1½ (30 tons the latter) at a small advance on Saturday's prices, and on Wednesday the smelters advanced the tin standard 2s. per ewt. all round. This is very encouraging, and more rostrate hue rests on Cornish mining prospects. Although the present stocks of foreign tin are heavy they are diminishing, and there is no English tin stock. The consumption of tin at this time is very great, nearly 3000 tons more having been sold for delivery in the nine months of this year than in the corresponding period of last year. Tincroft, Dolcoath, and Carn Brea shares have received the principal amount of attention, more having been done in the first than for many weeks past.

The following are the closing prices:—Carn Brea, a fair amount of business has been done at 57 to 59, closing 58 to 59. Cooks Kitchen; a few shares have changed hands at 9½ to 10½, closing 9½ to 10. A good business has been done in Dol-



**TIN-PLATES.**—Market is quiet, but firm. There are some houses well supplied with orders, and those that are not are indisposed for the present to submit to any important concession in price.

**METAL MARKET—LONDON, OCT. 16, 1874.**

**COPPER.**—Messrs. Pitcairn-Campbell and Co. (Liverpool, Oct. 15).—We have to quote a further advance of 30s. to 40s. per ton on Chili bars, and 3d. per unit on ores and regulus, and there has been a good healthy consumption demand. Deliveries continue very large. Business transacted during the fortnight comprises about 2600 tons good ordinary brands at 81 $\frac{1}{2}$  to 83 $\frac{1}{2}$  per ton, and 125 tons picked brands at 83 $\frac{1}{2}$  to 85 $\frac{1}{2}$  10s. per unit; 670 tons regulus here at 16s. 8d., and 78 tons Corocoro Barilla at 18s. 3d. per unit. At Swansea 1170 tons ore and 28 tons regulus sold at 16s., 630 tons ore at 16 $\frac{1}{2}$  3d., 580 tons regulus at 16s. 6d., and 440 tons regulus at 16s. 9d. per unit. Quotations are 82 $\frac{1}{2}$  to 85 $\frac{1}{2}$  10s. for Chili bars, 16s. for ore, 16s. 9d. for regulus, and 18s. 3d. for Barilla. A small quantity here during the fortnight from West Coast, S. A. produce.—Maipu, from Valparaiso, 125 tons bars; Diawana, from Valparaiso, 460 tons bars, 300 tons ingots, and 75 tons Barilla. At Swansea, nil. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

	Ores.	Regulus.	Bars.	Ingots.	Barilla.
Liverpool .....	—	—	11,080	20	—
Swansea .....	1386	4583	815	—	—
Total .....	1386	4583	11,865	20	—

Representing about 14,200 tons of fine copper, against 15,500 tons on Sept. 30, 1874, 21,800 tons on Oct. 15, 1873; 21,000 tons on Oct. 18, 1872; and 17,700 tons Oct. 10, 1871. The Board of Trade returns give the following figures for the first nine months:—

Imports, exclusive of pyrites .....	Tons	45,787	40,397	1872.
Exports, including yellow metal .....		45,278	42,178	1874.
				83,544

The imports of pyrites will probably be rather less than last year.

Messrs. Vivian Younger, and Bond—COPPER: Chili bars have been in fair demand without any material fluctuation in price, 83 $\frac{1}{2}$ , being paid for cash parcels and some extra prompt, 83 $\frac{1}{2}$ , 10s. to 84 $\frac{1}{2}$ , picked marks, with a parcel of 100 lbs. of the same quality. Chilean bars, 83 $\frac{1}{2}$ , 10s. to 84 $\frac{1}{2}$ , unit at Liverpool, 84 $\frac{1}{2}$ , 10s. to 85 $\frac{1}{2}$ , 10s. to 86 $\frac{1}{2}$ , 10s. to 87 $\frac{1}{2}$ , 10s. to 88 $\frac{1}{2}$ , 10s. to 89 $\frac{1}{2}$ , 10s. to 90 $\frac{1}{2}$ , 10s. to 91 $\frac{1}{2}$ , 10s. to 92 $\frac{1}{2}$ , 10s. to 93 $\frac{1}{2}$ , 10s. to 94 $\frac{1}{2}$ , 10s. to 95 $\frac{1}{2}$ , 10s. to 96 $\frac{1}{2}$ , 10s. to 97 $\frac{1}{2}$ , 10s. to 98 $\frac{1}{2}$ , 10s. to 99 $\frac{1}{2}$ , 10s. to 100 $\frac{1}{2}$ , 10s. to 101 $\frac{1}{2}$ , 10s. to 102 $\frac{1}{2}$ , 10s. to 103 $\frac{1}{2}$ , 10s. to 104 $\frac{1}{2}$ , 10s. to 105 $\frac{1}{2}$ , 10s. to 106 $\frac{1}{2}$ , 10s. to 107 $\frac{1}{2}$ , 10s. to 108 $\frac{1}{2}$ , 10s. to 109 $\frac{1}{2}$ , 10s. to 110 $\frac{1}{2}$ , 10s. to 111 $\frac{1}{2}$ , 10s. to 112 $\frac{1}{2}$ , 10s. to 113 $\frac{1}{2}$ , 10s. to 114 $\frac{1}{2}$ , 10s. to 115 $\frac{1}{2}$ , 10s. to 116 $\frac{1}{2}$ , 10s. to 117 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Messrs. Henry Rogers, Sons, and Co.—COPPER: There seems to be a lull in the demand for bars, but in English the trade has increased during the week, and better orders may be received even at a delayed delivery. The export demand, however, for manufacturers of copper as well as yellow metal, is checked by the present prices, but has been renewed towards the close of the year. The smallest size of bars is now at 16s. 9d.; importers now ask 17s.—TIN: There has been a better demand, and quotations have advanced fully 80s. For plates there seems to be a lull, but the demand for tin plates is fully as active. The demand is good, especially for galvanising. English makers being sold forward, foreign brands are being taken to supply immediate wants. The article has every appearance of being dearer through the winter.—LEAD is very firm and scarce; 22s. is now quoted by most of the makers.

**MESSRS. JAMES AND SHAKESPEARE—COPPER:** Furnace material on spot, Swansea and Liverpool, has been sold by private contract at 16s. 3d. for one, 16s. 1d. for regular, all Chilean produce; the quantity now remaining in store lies entirely at the former port, and is mostly held for extreme rates. Bars remain virtually unasked for, and the market is not likely to be cleared. As the autumn buyers would have operated pretty freely, but sellers demanded the top market values throughout, and the former refused to pay beyond the lowest quotations on our list, except where holders were willing to give them a selection of brands. One great cause of the present inactivity is that no news of the Charters for the last fortnight of September are yet to hand, and we should not be surprised if no advices thereof come except by the mail, due about middle of November; those for the first half of present month may be expected by telegram *via* Panama, in which case the market will be cleared by the end of the month. As the autumn sorts, and, whilst importers refrain from pressing sales, there is no disposition to purchase at curr. mt. values. English descriptions are also quiet, but some makers are demanding higher rates. —**TIN:** Smelters have raised their prices for English 2s. per cwt., but orders at the advance are scarce. For foreign sorts there has been a good enquiry since Friday last, and values are rather firmer; the bulk of the purchases are supposed to be to cover "bear" sales, and it is believed that a considerable quantity must be thus taken during the present month. Since the end of 1890 the bulk of tin has been imported from the Straits, and the autumn quarter seem likely to continue on a large scale, it is unlikely that any great advance can be established on present quotations. —**LEAD:** keeps very strong, and makers have again put up their prices. Owing to the small supply of Spanish containing silver, it is difficult to obtain English pig for early delivery, and when smelters can give prompt shipment they can obtain the highest figures on our list. —**TIN-PLATES** are a shade better; the demand, however, is somewhat below the usual average. —**SPELTER** is very firm, and shows a tendency to further advance. —**ANTIMONY** somewhat steadier, and values slightly higher.

Messrs. Pixley and Abell—GOLD: As anticipated in our last circular, the balance of the gold brought by the steamer from Melbourne, 291,000*l.* in value, has been sent into the Bank, there being no demand for bars. The withdrawals of sovereigns, chiefly for Egypt, have been heavy during the week—no less than 410,000*l.* having been sent away: further shipments being contemplated next week. The Douro has taken 20,220*l.* to the Brazils, and the Comrad 10,000 to Batavia. The Pekin, with 192,240*l.* gold coin, from Japan, is due on the 10th inst. It remains to be seen whether the sale of 1 per cent. in the present market will do this, or if it will it will be at a sacrifice of a portion of this amount here. The arrivals during the week have been—15,400*l.* from Africa; 35,000*l.* from New Zealand; 19,800*l.* from West Indies: total, 70,200*l.*—Silver: Further orders have been received, and the market for the present remains firm at 57 11-16*d.* The arrivals during the week have been small, comprising 13,800*l.* only, from all ports.

Tin has advanced 2*l*. per ton this week, and the MINING SHARE MARKET has been somewhat firmer in consequence, but there has not been much business transacted, and the settlement of the fortnightly account during the week was comparatively very small.

We have been looking forward to this advance in tin, and trust it may soon be succeeded by another, as we understand that with small stocks on hand abroad and at home the consumption is increasing, and the sales during the last few months have exceeded by more than 2000 tons those of the corresponding month of last year.

The mines mostly influenced by the advance have been Dolanville, Ironcroft, Carn Brea, East Lovell, Cook's Kitchen, Wheal Grenville, Kitty (St. Agnes), Wheal Peevor, West Basset, and a few transactions have taken place in Van Consols, Tankerville, Roman Graves, Pennerley, Penstruthal, Parys Mountain, Hingston Down, Marazion valley, and a few others.

Dolcoath shares are firm at 47 to 49; Carn Brea shares have advanced to 58, 60; Tincroft, 30 to 32; Cook's Kitchen, 93 to 10; East Lovell, 11 to 11½. Devon Great Consols in good demand, and leave off 1½ to 1½; in the 115, east of Northway's cross-cut, the new south lode is 2 ft. wide, and worth 2 tons of ore per fathom. The 145 east of the 115 is worth 7 tons, or 35% per fathom; and the 130 east 7 tons, or 35% per fathom. In Castle's winze, below the 130, it is worth 2 tons per fathom. Wheal Grenville shares have further advanced to 54, 55; the lode, so far as cut into at the 160 cross-cut, is worth 18% per fathom. The various points in operation in this mine are valued in the aggregate at 148% per fathom. Tankerville, 74 to 75; the lode in the 152, west of Watson's shaft, is 6 ft. wide, and getting wider; the 140 continues as last reported. The sale of ore on Thursday (100 tons) realised 147, 8s. 6d. per ton. At Old Batholes, in the lode discovered on the top of the hill there is some splendid leadstreak which leads the agents to suppose they are on the top of a course

Rosewall Hill and Ransom United,  $\frac{1}{2}$  to  $\frac{3}{4}$ ; no call was made at the meeting, and the improved prospects at the new mine are such as to lead the agents to expect that even with the present price of gold in the time is not far distant when the mine will be making good profits. The lode in the new flat-rod shaft, on Middle lode, is now down 2 fathoms below the 25, and with a lode 2 ft. wide, worth 100 per fathom. The 25 west has been driven 7 fathoms, and the lode is worth 150 per fathom. The 25 east is worth 100 per fathom. Old reburgett,  $\frac{1}{2}$  to  $\frac{3}{4}$ ; the mine is looking better, and now that a considerable outlay has been made in machinery, and in the arrangement of the dressing floors, the returns may be expected to increase, while the new arrangements will save a good sum monthly in the costs. In the 90 fm. level the lode has come into the shaft, which is important, showing, first, that the south run of ore is lengthy; and second, the shaft can now be sunk in productive ground. At the 80 cross-cut had to be driven about 40 fms. through barren ground to reach the run of ore; at the 70, about 30 fms.; at the 80, from 10 to 20 fms.; and at the 90 it is in the shaft. The north deposit of ore is also now coming into play. Prince of Wales,  $\frac{1}{2}$  to  $\frac{3}{4}$ ; a new lode underlying north has been intersected in the 60 ex. it will be

Names.	Addresses.
Bagillt Smelting Company .....	Bagillt Upper Works, near Holywell, Flintshire.
Kenrick and Son .....	Wynn Hall Spelter Works, Ruabon.
Dillwyn and Co. ....	Lundre Works, Swansea.
Richardson and Co. ....	Copper Ore Works, Swansea.
Tinplate Spelter Company .....	1, Dean street, Newcastle-upon-Tyne.
Wibber Spelter Company (Limited) ..	Swansea.
Hendon Spelter Company .....	Fire Engine Buildings, Sunderland.
Vivian and Son .....	Hafod Copper Works, Swansea.
Ripley Spelter Company .....	Ripley, Derbyshire.

SHIPMENTS.	
Week ending Oct. 11, 1873	Tons 15,492
Week ending Oct. 10, 1874	10,307
Decrease	5,185
Total decrease since Dec. 25, 1873	151,182

LEAD.—This metal throughout the week has been in good demand and very scarce for early delivery; good soft English pig is now quoted 22½ 10s.; and LB 22½ 12s. 6d., and 22½ 15s. per ton.



taken down shortly to ascertain its bearing and value. It has never been seen in the mine before, and from its appearance and the strata in which it is embedded the agent considers it an important feature. Wheel Peavor, 2½ to 3½; the mine sold on Saturday last 6½ tons of black tin, which, with the stone previously sold, makes 546½ for the month. Bog, ½ to ¾; East Van, ¾ to 1; Great Laxey, 1½ to 2½; the meeting held at Douglas, on Wednesday, was somewhat less noisy than usual; the Dearden-Sherwood party was less irritable, and even Dr. Thomson and Mr. Stephenson were comparatively tame, though still a little venomous. Capt. Trevillion's report was considered satisfactory by all, and if those now in opposition could be induced to place confidence in the directors the company would increase in prosperity. A dividend of 6s. per share has been declared. Messrs. P. Watson and Broadbent were re-elected, Mr. Dearden being 237 votes under Mr. Broadbent. The meeting is fully reported in the Supplement to this day's Journal. Herodsfoot, 2½ to 3½; Hingston Down, 1 to 1½; Ladywell, 2½ to 3; Marke Valley, ½ to 1½; Parys Mountain, 7s. to 9s.; Pennerley, 1½ to 1¾. Providence Mines, 4 to 4½; Roman Gravel, 13½ to 14½. West Tolgus, 75 to 80; the lode in the 25 end west is now worth 5 tons of copper ore per fathom; the stopes in the back 12 tons and 4 tons per fm. The last sale of copper ore realised 24000. South Crofty, 9½ to 10; the lode in the bottom of the shaft continues to look well. South Carn Brea, 1½ to 1¾; at the meeting the accounts show a loss on three months' working of 543½. 6s. 6d., and a debit balance of 112½. The costs of the mine charged up were 2247½ for three months. Copper realised 136½; tin, 1634½. South Caradon, 95 to 100.

South Condurrow shares enquired for, at 3½ to 3¾. South Frances, 9 to 10. South Prince Patrick, 2½ to 3; at the meeting a dividend of 2s. per share was declared. Of the 10,000 shares of 1½, each into which the capital of the company is divided, 8000 have been issued, and the dividend, therefore, absorbs 8000. South Roman Gravel, ½ to ¾. Trumpet Consols, ½ to 1½; a call of 15s. per share was made here. Unity Wood, ½ to ¾; Van, 22 to 24; West Basset, 8½ to 8¾; West Chiverton, 2 to 2½; West Esgrail Lie, 1½ to 2½; West Frances, 9 to 10; West Maria and Fortescue, 7s. to 9s.; West Seton, 20 to 22½; West Tankerville, ½ to ¾; Wheel Basset, 20 to 22½; Wheel Jane, 2½ to 2¾; Wheel Kitty (St. Agnes), 5½ to 5¾; Wheel Uny, 1½ to 2; Van Consols, 2½ to 2¾; the lode in the bottom of the mine is improving for lead. Penstruthal, 10s. to 12s. 6d.; 20 tons of tin have been sold this month for 1198½. Cathedral, 17s. 6d. to 22s. 6d.

With regard to Foreign Mines, the Linares Company have declared a dividend of 3s. 4d. per share; the shares are quoted 3½ to 4. Alamillos, 1½ to 1¾; the dividend for the half-year was 2s. per share. Fortuna, 4½ to 4¾; the dividend declared for the half-year was 2s. 6d. Almada and Tirito, ½ to ¾; Birdseye Creek, 2 to 2½. Chontales, ½ to ¾; the advances this month show a profit of 8½. The quantity of ore crushed has been 1304 tons, which produced 227 ozs. of gold, value 634½, at a cost of 626½. The damage occasioned by the floods has been repaired, and the agents hope to keep the mill fully supplied. Javali, ½ to ¾; the profit here is 572½. 15s. 7d. for the month; produce, 400 ozs. of gold; remittance, 1102½. 1s. 3d.; expenses, 329½. 5s. 8d. Don Pedro del Rey, ½ to ¾ dis.; Eberhardt and Aurora, 4½ to 5½; Emma, 1 to 1½; Flagstaff, 1½ to 2½; Frontino and Bolivia, 7s. 6d. to 10s.; Last Chance, 1 to 1½; New Quebrada, 3½ to 3¾; Richmond, 6½ to 6¾; St. John del Rey, 240 to 245; South Aurora, ½ to ¾; Sweetland Creek, 2½ to 3; Tecoma, ¾ to 1.

The Market for Mine Shares on the Stock Exchange during the week, notwithstanding the fortnightly settlement, which was completed on Thursday, has been well maintained. Home mines have been active at improved quotations, especially lead and tin descriptions, both these metals having advanced. As regards lead, judging by the operations that are taking place in the best informed quarters, much higher prices are looked for. Copper, on the other hand, is less firm, and but few transactions are recorded at the recent advance, the impression being that the higher quotations are due more to speculative purchases than actual business demand.

American mines have been generally neglected, and lower values have ruled. The chief feature in this department has been the continued apprehension relative to the position of Flagstaff. It is known that the company are entirely without funds, and that in order to commence the projected legal proceedings it will be necessary to raise additional capital, either by the issue of debentures or preference shares, the effect of which will be to further prejudice the market value of the ordinary shares. The expediency of entering upon such a career of litigation is generally questioned, while the result is regarded as extremely doubtful. Besides this, according to well-authenticated private advices, the mine has materially fallen off in value and prospects, and it appears that at no time has it occupied the favourable position previously indicated.

Richmond Consolidated, 6½ to 6¾.—Cablegram received: "Week's run, \$44,000." The recent vigorous prosecution of exploratory works has been attended by singularly rapid and great successes. We learn that rich carbonate ore has been struck at a depth of 430 ft. from the surface, much below any point yet reached by the great vein, thus affording a splendid prospect for the future. At a depth of 70 ft. from the point where it was first met with in the late new discovery the ore has been followed 80 ft. forward, and there is now a head of 20 ft. wide. The ore in this portion of the mine is fortunately rich in lead, and thus supplies the deficiency in that metal in the main body of ore where the silver and gold predominate. The total make this season amounts to \$913,000. Eberhardt and Aurora, 4½ to 4¾; a cablegram announces that during the 15 days in September 570 tons of ore were crushed, the average assay of which was \$56; the bullion produced was \$21,923; no change in the mine. South Aurora, 10s. to 12s.

Emma shares have been stationary at 1 to 1½; the special meeting on Wednesday (reported elsewhere) was adjourned for a month, by which time the winding-up petition will have been heard, and it is expected, the chairman returned from America. Last Chance, 1 to 1½; Tecoma, ¾ to 1. Utah, ½ to ¾; a letter from Mr. Longmaid appears in another column. It seems that he has formed the intention of leaving the works, and coming home. New Pacific, ¾ to 1; Mr. Pringle's report, in another column, is considerably more encouraging.

The shares in the various Hydraulic Mine Companies remain quiet. There have been transactions in Sweetland Creek at an advanced price, consequent on the receipt of a favourable telegram concerning the last clean-up. Birdseye Creek are at about the same quotations as last week. Cedar Creek have been dealt in. Blue Tent remain without alteration. Sweetland Creek, 2½ to 3; in another column we publish particulars of another run of 62 days, resulting in a profit of \$16,000. As Mr. McLean has before stated that this run was principally on side dirt, it is most encouraging, and seems to bear out his assertion that the side dirt is almost as rich as the channel. We are informed that he will not be able to recommence washing until towards the end of November. Birdseye Creek, 2 to 2½; there is nothing of interest from Mr. Powers, he is getting everything into proper shape, and carefully going through the work during the enforced idleness caused by the water season having closed. Cedar Creek, 1 to 1½; the works here are almost closed for the season. A good supply of water next year would enable the company to make good profits, as a very great deal of the unproductive work has come to an end.

Sierra Buttes, 2½ to 2¾; the receipts for September from Sierra Buttes amounted to \$23,166, against a cost of \$21,280, and from Pumas Eureka \$27,813, against a cost of \$13,868. Independence, 2½ to 3; 1000 tons of ore were crushed during September, and the gold produced \$8000, against a cost of \$4000. St. John del Rey, 235 to 240; operations since last advices have been continued regularly, and with few interruptions. The produce for August amounted to 25,947 ozs., which is a slight increase upon the previous month, the standard yield being almost the same; considering the diminished water-power available in August, the produce extracted may be regarded as satisfactory; the profit for the month was 48000. Don Pedro, ½ to ¾ dis.; the profit for August amounted to 113½; the produce for September was 7100 ozs.; operations generally were continuing satisfactory. Chontales, ½ to ¾; the reports from Mr. Smiddy by the mail now to hand show that all the damage occasioned by the late heavy

floods had been repaired, and that during the current month there is no reason why the whole 36 stamp-heads should not be fully employed on profitable ore. They are capable of crushing from 2500 to 2700 tons per month, so that it may reasonably be expected the next advices will bring considerably increased profits for the month of August, as there will be no corresponding increase in cost in proportion of the larger quantity treated. The wet season may now be considered fairly set in, and the next few months will, in all probability, show a larger quantity of ore crushed than at any former period.

Cape Copper shares have declined to 27, 28; during August Ookiep returned 765 tons of 32 per cent., and Spectakel 62 tons of 27 per cent. Sales by public ticketing have been 398 tons of ore on Sept. 22, at an average of 15s. 9d. per unit, realising approximately 8280½, and 408 tons on Oct. 6, at an average of 16s. 1½d. per unit, realising approximately 10,450½, and put forward for sale by public ticketing 500 tons of ore on the 20th inst. New Quebrada, 3½ to 3¾; Panulillo, ½ to ¾; Rio Tinto, 1 dis. to par; Russian Copper, 2½ to 2¾.

Van, 22 to 24; the mine is looking as well as possible, and on Monday the agent sampled 500 tons lead for the four weeks. Van Consols, 2½ to 2¾; the operations at the mine are now confined to sinking and driving on the productive points on the lode, and the monthly costs will be now much reduced without impairing the efficient working of the mine. Bog, ½ to ¾; the mine is opening out very well, and improving, as will be seen from the report which we publish in the account of the meeting in another column. At this meeting the Chairman announced that the applications under the reconstruction scheme were coming in fairly, but that more were required before the board would be justified in going on. It was resolved, therefore, that a further appeal should be made to those shareholders who had not yet responded, and that in the meantime the meeting should be again adjourned. Looking at the way in which the mine is at present opening, it would seem hardly possible any member should refuse to come forward and support the board in their endeavour to put the concern on a satisfactory basis. Pennerley, 1½ to 1¾. Engine-Shaft: The lode in the 100 fm. level west, on east and west, is worth 1½ ton of lead per fathom, and the Big Ore lode going west 1 ton. The winze below the 70 has been communicated with the level below, and stoping commenced each end of the winze, where there is a good lode, worth 2 tons per fm. An important improvement has taken place in the 40 west, on the north lode, the lode being worth 3 tons per fathom. This is entirely new, as nothing has been done on the lode below the adit, from above which large quantities of lead have been raised. The lode in the 25 east contains a little lead, and the winze below is worth 2 tons of ore per fathom.—Potter's Pit: In the 65 north another branch has been met with, and they have about 9 ft. to drive to intersect the lode. The winze below the 55 west is worth 1 ton of ore per fathom, and will be holed by the end of the month. The 45 fm. level winze has been communicated with the level below, which has laid open stoping ground. The lode in the rise on the caunter lode has a good appearance, yielding ½ ton of lead per fm. The 15 east is worth 1 ton per fathom. West Esgrail Lie, 2½ to 3; the cross-cut in the 34 is within a few feet of the north part of the lode. The ground has entirely changed in character, and no doubt a good lode will be cut when reached. There is no particular change in the western mine, and all surface operations are going on well.

Subjoints are the closing quotations:—

Bog, ½ to ¾; Carn Brea, 5½ to 5¾; Cook's Kitchen, 9½ to 10; Devon Great Consols, 1½ to 1¾; Dolcoath, 48 to 48½; East Caradon, 1 to 1½; East Lovell, 11½ to 12; Great Laxey, 11½ to 12; Hingston Down, 1 to 1½; Marke Valley, 11s. 6d. to 20s.; Pennerley, 1½ to 1¾; Perkins Beach, ½ to ¾; Parys Mountain, ½ to ¾; Penstruthal, 10s. to 12s. 6d.; Roman Gravel, 13½ to 14½; South Condurrow, 2½ to 3; Tincroft, 30½ to 31; Tankerville, 7½ to 7¾; Van, 22 to 24; Van Consols, 1½ to 2; West Basset, 8 to 8½; West Chiverton, 1½ to 2½; West Tankerville, ½ to ¾; Wheel Grenville, 5 to 5½; Almada and Tirito, ½ to ¾; Birdseye Creek, 2 to 2½; Cedar Creek, 1 to 1½; Cape Copper, 2½ to 2¾; Colorado Terrible, 3½ to 3¾; Chontales, ½ to ¾; Don Pedro, ½ to ¾ dis.; Eberhardt and Aurora, 4½ to 5½; Emma, 1 to 1½; Flagstaff, 1½ to 2; Frontino and Bolivia, ¾ to 1; Independence, 2½ to 3; Last Chance, 1 to 1½; Malpasco, ¾ to 1; Malabar, 10s. to 15s.; New Quebrada, 3½ to 3¾; Port Phillip, ½ to ¾; Rica, ¾ to 1; Richmond Consolidated, 6½ to 6¾; South Aurora, 10s. to 12s.; Sweetland Creek, 2½ to 3; St. John del Rey, 235 to 245; Sierra Buttes, 2½ to 2¾; Utah, ½ to ¾; United Mexican, 2½ to 2¾.

COLLIERIES AND IRONWORKS.—Transactions have been recorded during the week in Thorp's Gawber, Bilson and Crump, Chapel House, West Mostyn, Cardiff and Swansea, Newport Abercrom, Native Iron Ore, Cleef Hill, Silkstone Fall, Chillington Iron, and a few others. Owing to a call of 1½ per share, payable at the end of this month, Cardiff and Swansea shares have been offered by weak holders, and close ½ lower than last week—3½ to 3¾. The output and general condition of the collieries continue to be very satisfactory. Newport Abercrom shares have been enquired for, owing to a few tons of coal by way of commencement having been sent to market. Shares close B 3½ to 4½. The improvement noticed last week in Chapel House has been maintained, and shares close firm at 4½ to 4¾. The iron works of the Wigan Coal and Iron Company received notice three weeks ago of a 10 per cent. reduction, to which they object, and left off work on the 1st inst. The furnaces were damped, and a determined attitude was assumed on both sides. However, on Friday, Mr. Shuffellbottom (who is said to be a tower of strength), the Lancashire representative of the Iron-makers' Society, waited upon Mr. Hewlett, the managing director, accompanied by some of the men, and after a long discussion, the masters gave them to understand that they would be allowed to resume work on the condition that all the reductions which had been taken during the previous fortnight, and the succeeding one, shall be taken into consideration and be averaged. The deputation returned to a meeting then sitting at Ince, and reported the result. The proposals were submitted to a ballot, which gave a large majority for agreeing to the masters' terms. Accordingly on Saturday the furnaces were blown in, and the men resumed work on Monday morning following. Nant-y-Glo and Blaia, 47 to 50; Alltalt Colliery, 4½ to 5½; Ebbw Vale, 6½ to 8½ dis.; South Cleveland, 9 to 7 dis.; Central Swedish Iron, 4 to 6. On the resumption of business in Chancery a petition that has been presented will be heard for winding-up the People's Coal Company. Silkstone Fall, 2½ to 2¾; Chillington Iron, 2½ to 3; Lydney and Wigpool, 2½ to 1½ dis.; Lehigh and Wilkes Barre Coal, 90 to 91½; New Sharlston are firmer, closing 9½ to 10½; Rhymney Iron, 38 to 40; Pelsall Coal, 12 to 14; West Cumberland, 6½ to 6¾ dis. At the statutory meeting of the Unisawade Coal, Coke, and Brick Company, Mr. P. Moeley in the chair, a satisfactory letter was read from Mr. Lewis, the managing director at the works, explaining the position of the company. It is anticipated that the sinking operations will be carried to the desired depth before the close of the year. The minimum dividend, at the rate of 10 per cent. per annum, guaranteed by the vendors for five years, will be payable on Jan. 1 next. Cleef Hill, 5 to 10s.; some large transactions have been recorded during the week in Thorp's Gawber, at prices varying from 15½ to 16½, all buyers. Bilson and Crump have changed hands at 10½ to 11. There have been transactions in Richardson's Company at ¼ prem. The allotment which takes place on Tuesday next will be made in the fairest possible way to both small and large applicants.

It is announced that the subscription lists for 110,0000. Perpetual Five per Cent. Debenture Stock secured upon the extension to the Midland Railway of the Somerset and Dorset Railway Company will be closed on Monday next, the 19th inst., for London, and on Tuesday next, the 20th inst., for the country.

THE IRON TRADE.—(Griffiths's Weekly Report).—Friday Evening, Oct. 16: We have to report a fall of 3s. in the price of GMB iron on the Glasgow Exchange this week. Last Friday the market closed at 68s. 6d.; to-day the price is 65s. 6d.; Coltness, 110s.; Langlands, 110s.; 110s.; 110s.; Monkland, 98s.; f.o.b., Glasgow; Glenrannoch, 100s.; Eglinton, 90s.; f.o.b., Androssan; Shotts, 100s.; f.o.b., Leth; Kennel, 95s.; f.o.b., Bo'ness. The iron trade has been more active this week. The orders held back for the quarterly settlement are, to some extent given out since, and the trade altogether is more brisk than it was before Quarter-day. Some good orders have been given out for marked Staffordshire bars of all kinds, the engineers and railway establishments being more disposed now to replenish their stocks. Marked bars are selling at 11½; the Earl of Dudley's and John Bradley and Co. take their usual extra price. The demand for sheets and hoops on this market continues unabated, and a good business has been done in Robert Heath and Son's crown bars without any abatement on the prices fixed at the North Staffordshire Quarter-day, held at Stoke-upon-Trent. Large orders for hoops continue to find their way to the works at this end of the county. Second-class Staffordshire iron of all kinds fetches the same price as that current previously to Quarter-day. Indeed, sheet-iron of the best second-class makes is firm in the market for immediate delivery at these rates. The meeting at the Barrow Exchange on Monday last was quiet, with only a moderate business. At Middleborough, on Tuesday, prices were fairly maintained, this market, however, continues undecided; shipping orders being inactive. Orders for the engine shops in Lancashire and Yorkshire have been given out freely at Manchester this week. On the Glasgow Exchange Scotch iron has received a little; this remark applies both to warrants and makers' iron. Stocks in Connell's stores to-day amount to only a little over 17,000 tons; there are 117 furnaces in blast in Scotland. In Staffordshire, Messrs. Grazebrook, of Netherton, are about to blow in another furnace, to make their famous cold-blast iron. We omitted to mention in the Quarter-day report that the eminent firms Lowmoor, Bowling, the Farnley Company, and Taylor Brothers make no change in the price of their iron this Quarter-day. The tin-plate trade looks more cheerful, with improving prospects. We mentioned in this report last week that the tin-plate makers' Quarter-day, will be held next January, at the Queen's Hotel, Birmingham, on the Wednesday preceding the Birmingham Quarter-day in that town. At the Birmingham Exchange yesterday orders were more freely given out for finished iron. The makers of best sheets, indeed all kinds of sheets, have difficulty in executing the orders on hand for prompt delivery. The demand for hoops and nail-roads is brisk, and an increasing business was done in bars of all kinds. A moderate business was done in pig-iron. For the raw material the market was firm, and although constant competition in regard to price were observed between the pig makers and manufacturers also

former in every case, maintained late prices. We regret to have to state that Mr. Charles Ryland, the well-known metal broker, was unable to attend the Exchange through indisposition.

## ORES, &c.

I BUY at the highest prices:—  
LEAD ORES.—LEAD SILVER ORES.—SILVER-LEAD ORES.  
SILVER-LEAD.—HARD LEAD.—ANTIMONIAL LEAD.  
GOLD AND SILVER ORES.  
ZINC AND LEAD ORES MIXED TOGETHER.

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MINING ENGINEER AND GEOLOGIST,  
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EXAMINES and REPORTS upon MINERAL and other LANDS, MINES, ORE BEDS, &c., either in or out of the United States.

Information furnished in regard to any of the American Mining Districts. Dr. MELLISS has had special experience in the Silver and Gold Mines west of the Rocky Mountains, and in the Coal and Iron Region of the Southern States.

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MIXED METALS and DROSS, containing LEAD, COPPER, TIN, or ANTIMONY.

CAZIN'S COMBINATION ORE-SIZER AND CONCENTRATOR ONE-PLUNGER SYSTEM.

In ONE machine—a complete system of ore concentration, when added to a battery of stamps.

Covered by Letters Patent of July 2nd, 1872, and recent application.

This machine contains a sizing apparatus (revolving screen), delivering four sizes of ore to four rows of sieves, each row concentrating according to specific gravity—the sized ore furnished by the sizer. Each row contains five sieves, end to end, on which the ore is submitted to the concentrating action long enough to prevent loss of valuable parts. The machine, continuously fed, works second and third-class ore into first-class ore, of perfect cleanliness, in automatic action, and simultaneously in four grades or sizes. It thoroughly separates native gold or copper from quartz or any other lode matter; galena, silver and silver sulphurets, and pyrites from quartz; galena from barytes or pyrites, and pyrites from quartz. Added to a battery of stamps, this machine constitutes a complete system of ore concentration, sufficient for the requirements of most Western mines, with a capacity of 15 to 20 tons per 24 hours. The same machine is made for working two sizes at the time.

For particulars, apply to F. M. F. CAZIN, M. and C.E., Lock box 2225, Denver, Colorado, United States, America.

PARTNERSHIP.—A RAILWAY ENGINEER, of large experience and good connection, is open to RECEIVE PROPOSALS of PARTNERSHIP from a WELL ESTABLISHED FIRM of CIVIL or MINING ENGINEERS, SURVEYORS, METAL or MACHINERY AGENTS. London preferred. The highest references given and required. Address, "Westminster," MINING JOURNAL Office, 26, Fleet-street, E.C.

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TO INVESTORS.

AN OPPORTUNITY is now AFFORDED for the INVESTMENT of a SMALL CAPITAL in the PURCHASE of an INVENTION which only requires to be extensively known to make it MORE VALUABLE than ANY MINE in CORNWALL. There is no risk at all attached to it. The inventor retains one-quarter of the property. Apply to Mr. R. SYMONS, C.E., Thuro, Agent for the Inventor.

TO AMERICAN MINING COMPANIES, AND OTHERS.

AN ENGLISH CIVIL AND MINING ENGINEER, about to visit Colorado, Utah, and other Pacific States, is OPEN for COMMISSIONS to EXAMINE and REPORT upon MINES, or the present CONDITION of existing UNDERTAKINGS, on very reasonable terms. He has a thorough knowledge of accounts, and understands titles. Will be absent about three months. Address, "C. E.," Auxiliary Offices, 36, New Broad-street, E.C.

WANTED, by a Young Man, a SITUATION, at home or abroad, as DIALLER, MAPPER, and ACCOUNTANT, with a slight knowledge of Assaying, and is a thorough Practical Miner. Good reference. Address, "X. Y. Z.," Post Office, Tavistock.

WANTED, the MANAGEMENT of a COBALT and NICKEL WORKS, or to JOIN a CAPITALIST in ESTABLISHING a TRADE. Address, "P. S.," care of Mr. Edward Day, 27, Warstone-lane, Birmingham.

WINDING ENGINE.

WANTED IMMEDIATELY, A STRONG, WELL MADE horizontal high-pressure WINDING ENGINE, 24 to 26-in. cylinder, 4 to 5 ft. stroke, complete to end of crank shaft, including fly-wheel. Must be new, or very good second-hand. Crank carriage must be on left hand side of bed. Address, H. JOHNSON, Mining Engineer, 5, Trindle-road, Dudley.

WANTED, a DIRECT-ACTING CORNISH PUMPING ENGINE, cylinder 80 inches or upwards. Replies must state history, age, locality, makers' name, with the fullest particulars, and lowest price. Address, "F. F.," MINING JOURNAL Office, 26, Fleet-street, E.C.

UNITED MEXICAN MINING COMPANY (LIMITED).

Notice is hereby given, that the ORDINARY HALF-YEARLY GENERAL MEETING of proprietors will be HELD at the office of this company, on WEDNESDAY, the 4th day of November next, at One o'clock precisely. The above meeting will be converted into an EXTRAORDINARY MEETING for the purpose of passing the following resolution:—

That a call of Two Shillings and Sixpence per share be and the same is hereby made on all the shareholders in the company, the same to be payable on the 1st day of December next.

The Transfer-Books will be closed on the afternoon of the 24th instant, and reopened on the day succeeding the meeting.

By order of the Board, W. M. BROWNE, Secretary.

Office—No. 2, Great Winchester-street Buildings, E.C., London, 12th October, 1874.

THE YORKE PENINSULA MINING COMPANY (LIMITED).

All the PREFERENCE SHARES of the company having been TAKEN UP, instructions (following previous letters) have been telegraphed to the Committee, at Adelaide, to RESUME and PROSECUTE VIGOROUSLY OPERATIONS at the KURILLA MINE.

By order of the Directors, C. GRAINGER, Secretary.

1, King's Arms-yard, London, E.C., October 16, 1874.

SUBSCRIPTION FOR

£110,000 PERPETUAL FIVE PER CENT. DEBENTURE STOCK,

SECURED UPON THE

EXTENSION TO THE MIDLAND RAILWAY

OF THE

SOMERSET AND DORSET RAILWAY COMPANY.

NOTICE IS HEREBY GIVEN, that the SUBSCRIPTION LISTS for the above will be CLOSED on MONDAY next, the 19th instant, for LONDON, and on TUESDAY next, the 20th instant, for COUNTRY APPLICATIONS. By Order, A. DUFFORD, Secretary. General Offices: Glastonbury, Somerset, October 14th, 1874.



## Notices to Correspondents.

CARDIGANSHIRE OLD BOG.—I am a shareholder, and like your correspondent, "Inquirer," cannot obtain any information about the mine. Surely the shareholders deserve respectful treatment by those who have the management.—E.C.U.

Received.—"E. F. H."—"Shareholder" (Clee Hill Colliery)—"W. W." (Helensburgh)—"T. K."—"Amicus" should write to the Secretary of the company—"Shareholder" (Lovel)—"R. B."—"M. W."—"W. E. Y."—"G. G."—"Shareholder" (Van Consoles) should apply to the Secretary, who will readily send the information—"Stannum." Next week—"A. Dupe"—"Shareholder" (West Chiverton) should attend the meeting, and ascertain the particulars he requires.

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.

# THE MINING JOURNAL,

## Railway and Commercial Gazette.

LONDON, OCTOBER 17, 1874.

## THE MINERS' CONFERENCE.

The half-yearly Conference of the Amalgamated Association of Miners, which commenced its sitting on the 5th inst. at Birmingham, appears to have been principally remarkable for exhibiting the thorough weakness of that once apparently powerful body, the great secession of members, the indebtedness of many of the lodges, and the want of funds. In no instance within our recollection has such a complete exposure of impotency been volunteered by any trade combination as that made during the past week by Mr. HALLIDAY and his coadjutors. The association, which in the early part of the year presumed to dictate terms to employers and workmen as well, appears to have collapsed like a house built of cards, for one-half of the members have left it, and many more appear determined to follow a like course, as will be seen from our *resumé* of the proceedings. A large number of the men joined the association evidently believing that it was strong enough to prevent any serious reduction of wages. But as it turned out that the Association was not sufficiently strong to accomplish so much they left it in disgust, after paying their subscriptions and levies for a considerable time without receiving any benefit whatever of a substantial character, or having their position improved. This is only what might be expected when inducements to join a society are held out that cannot be accomplished. It is, therefore, not surprising to find that not only the Amalgamated but other miners' associations have come to grief during the late crisis, and their leaders treated with rudeness, and charged with sacrificing the interests of those who pay them well for their services. So long as matters sailed quietly along, and colliery owners proposed no reduction of wages, the Unions were looked upon as mighty powers, and the chiefs of them were told that they were amongst the ablest and cleverest in the country; but when it was found that they could not avert wages being very sensibly reduced then all was changed, and homage was refused to the officials who formerly looked for and received it. The men then demanded to know what the leaders considered they had been paying for if it was not principally to keep wages up, and not receiving what they considered a satisfactory answer became dissatisfied, and then seceded. That we are not exaggerating the actual situation we need only refer to the proceedings at the Birmingham Conference. At the commencement of it one of the delegates remarked that it was not desirable that the public should be made acquainted with the financial position of the Association, to which the secretary promptly replied that it was not intended to do so. This is all very well as far as it goes, but the public, as well as those more particularly interested, after such a very suggestive declaration will come to no wrong conclusion with respect to the funds in hand. That the amount is not very large in the aggregate, or if divided would be of much use individually, we are led to believe, not only from the official reticence, but from the statement made by the secretary to the effect that a number of lodges were in arrears to the extent of upwards of 18,000*l.*, whilst the number of members was now only 57,766, being a decrease of 48,602 during the last six months. This certainly looks more like a collapse than either healthy or assuring, and is not likely to animate any of the recusants to again become members of the Amalgamated Association. But further, it appears that the association is actually indebted some thousands of pounds to several districts.

In his opening address Mr. HALLIDAY alluded to the state of the coal trade, and to the necessity of the men accepting a reduction of wages, as proposed by the colliery owners of the Wigan district. He said there had been a great drop in the price of coal, and illustrated his position by stating that the charge for coal some time since in London was from 46*s.* to 50*s.* per ton, but now he saw that the price of coal brought in ships from East Hartlepool was quoted at 24*s.* per ton. Generally speaking, he said, "the price of coal had gone down in London 20*s.* a ton." Mr. HALLIDAY, as is often the case with very clever men, confounds two totally different things, whilst his statement that coal has fallen 20*s.* a ton in the metropolis is a mere fiction that will not stand looking at for a moment. This Mr. HALLIDAY would have discovered if he had looked into the Blue Book of the Select Committee on Coal of last year, and in which his own evidence is given. He would find that the 46*s.* to 50*s.* per ton related to coal delivered in London to consumers during 13 days in February, when there was a panic, but on March 1 it had fallen to 40*s.*, when it gradually receded until the close of the year, when it was 33*s.* a ton. The 24*s.* per ton alluded to was for coal sold to merchants from the ships. Prices of coal in London were the highest ever known during the first quarter of 1873, when the average paid for Hartlepool Wallends—the dearest coal entering the Port of London—was 1*l.* 14*s.* 6*d.* per ton. This is only, we suppose, one of the many inaccuracies that are sure to creep into even well-matured presidential addresses, and we feel sure Mr. HALLIDAY will thank us for setting him right. We quite agree with him, however, as to the necessity of the children of miners receiving a sound education, for by such they will not only improve their social position and become good and loyal members of the community, but will also make them less liable to be influenced by well-paid non-working agitators. But we cannot go with him when he urges the necessity of managers of collieries being practical men, and taken from the ranks of the miners themselves. What is wanted in the management of a mine is thorough competency, practical and scientific, and we find very few men working as colliers who are possessed of these qualifications.

The second sitting was followed by a public meeting of a semi-political character, in which Mr. CHAMBERLAIN, of Birmingham, Mr. HANDEL COSSIAM, and other extreme politicians took part. Mr. HALLIDAY proposed a resolution in favour of the borough franchise being assimilated to the county. The mixing up of political questions with trades matters we have on many occasions pointed out as likely to be most injurious to any trade association; but some gentlemen who aspire to parliamentary honours appear to be never so happy as when ventilating their political nostrums, which they do at all times and all seasons. Mr. CHAMBERLAIN alluded to the defection from the ranks of the Amalgamated Association, and remarked that it would be a disastrous time for working men generally if they ceased to repose that generous confidence in the leaders they themselves had elected, and after a series of successes on the first defeat behave unjustly to those who had hitherto represented them. The seceders, we believe, know as much, and we should say a good deal more, as to what is to their own benefit, than does Mr. CHAMBERLAIN. They know that the Amalgamated executive have made promises which they have been unable to keep, and hence the secession. But promises made without consideration, and for the sole purpose of obtaining a passing popularity, are sure to lead to unsatisfactory results and grievous disappointment. This has been the case with respect to a very large proportion of the members of the Association over which Mr. HALLIDAY has presided since its

establishment. Some six years ago the men were led to believe that by becoming members of it every grievance, real or fancied, would be redressed, wages would be advanced and maintained, and in the event of the masters showing any opposition money would be found to fight them. All this has now been changed, and the men find, when the pinch comes, that the Association is unable to give them material aid, and, as in the Wigan and St. Helens cases, advises them to accept the masters' terms. The advice is undoubtedly the best that could be given, and in our opinion will have to be followed. But the men have retorted by saying it was not advice but moral and pecuniary aid they required, and for which they had long been paying into the Association fund. This was what was stated by some of the delegates on Saturday as the views of those they represented, and it was followed by something approaching a scene. It appears that Mr. HALLIDAY saw Mr. M. PEACE, who acts on behalf of the Wigan Colliery owners, and expressed his surprise that a letter had been published stating that the delegates had agreed not to accept the 10 per cent. reduction, as he had recommended them to do. A good deal of discussion followed with regard to the matter, and the President then read a letter, dated Wigan, Oct. 9, which stated that at "a delegate meeting of one man from each colliery a vote of censure was unanimously passed on Mr. THOMAS HALLIDAY for his conduct in going to Mr. PEACE;" and, further, the Wigan district wishes to know "what authority Mr. HALLIDAY had for going to Mr. PEACE, and making the statement, as the men of the Wigan district consider him quite out of order in interfering in their business without their consent."

This was certainly very plain language to use to the President, and shows what the coming events are likely to be. A resolution was then come to recommending the men in the Wigan district to accept the 10 per cent. reduction and to resume work at once; and if they refused to do so that the Association decline to support them. The subject was again before the Conference at the sitting on Monday, when Mr. LEWIS, of St. Helen's, read a letter he had received from the district committee at that place. The letter stated that he was to leave the Conference immediately, as the committee did not see there was "any more business worth his staying longer for," and that there would be a delegate meeting the same evening; and they as a committee strongly recommended that their district withdraw from the Amalgamated, "hoping all other districts would do the same." This was certainly very strong, and anything but flattering to the President and executive; but the climax was reached at noon, when Mr. HIGHTON, the delegate from Wigan, handed to Mr. HALLIDAY a telegram which he had just received. It was, "Wigan delegates, come home at once by 12 o'clock train to meet us at district meeting." This certainly looks rather serious as to the future of the Association in its present numerical and financial weakness.

Complications, however, in connection with the Amalgamated Association of Miners have not come singly, but in battalions. Not only have the members seceded by thousands, but the arrears amount to many thousands of pounds that will never be paid, whilst, to crown all, the late Vice-President, Mr. J. BROWN, has declined all further relations with the Association, and it is understood he will now become President of a new one in North Staffordshire, where about 7000 men have recently left the Amalgamated. There is no reason whatever why Mr. BROWN should not fill such a position with as much credit as Mr. HALLIDAY, whose equal he is in every respect. Nor do we see why North Staffordshire should not have an Association and a chief of its own without going into Lancashire for one. But it appears that the Wigan, St. Helens, and North Staffordshire districts are not the only ones that are dissatisfied with the conduct of the executive, who appear to give the men no liberty of action whatever in relation to their work and wages, for complaints have also been made from other quarters. Of this we had an instance when, in eulogistic terms, the President suggested that a sincere and hearty vote of thanks should be passed to the Mayor of Birmingham for his success in settling the vexed question between masters and workmen in North Staffordshire and East Worcestershire. A resolution to that effect was proposed and seconded, but before it was put Mr. JACKSON, delegate (West Bromwich), got up and said he hoped the resolution did not apply to his district, the men in which were far from satisfied with the way in which matters had been settled.

Looking at what has transpired during the Conference, the diminished number of members, and the districts that threaten to sever all connection with the Amalgamated, its want of funds and consequent powerlessness to oppose any reduction of wages, it is evident that it is now reduced to a very low position indeed. The history of the Amalgamated may be said to be a brief but a most aggressive one. It led districts to strike, raised tens of thousands of pounds, caused a vast amount of misery, without in any way benefiting those who belonged to it. That such has been the case we need only refer to the statements of the delegates at the Conference, and the letters read at it. It was certainly the means of raising one man to a position which he considered entitled him to become a member of Parliament, and paid hundreds of pounds for him in this attempt to be so elevated. Now, it is fast crumbling away, unhonoured and almost unnoticed, the annals of the Trades Unions of the country showing no such collapse as has been the fate of the Amalgamated Association during the last six months, and out of the remnant of it and the executive they may say with truth *graviora manent*.

## THE DRAINAGE OF THE SOUTH STAFFORDSHIRE COAL FIELD.

Now that ground is broken, and work has been commenced in good earnest, it may be of interest to state how matters stand, what has been done hitherto, and what remains to be done. The Act is altogether new, and, of course, involves many points for consideration at every step. After the area proposed to be affected by the operations of the Act was defined by the arbitrators, in the exclusion for the present of the part of the district north of the Bentley Fault, the remaining area was divided into five districts for underground work, and called respectively the Bilston, Tipton, Oldbury, Kingswinford, and Old Hill districts; but all treated as for one surface work. Attention to the surface being the first point required by the Act, the arbitrators made many visits to the districts, and inspected the streams and swags, and decided that the natural streams should be properly repaired and made to carry off the surface water. To facilitate the commencement of this important operation, the arbitrators ordered most urgent works, without waiting for a report upon the whole surface. They have ordered the repair of the streams at Bilston, Darlaston, Willenhall, Wednesbury, Netherton, and Kingswinford. The commissioners have thus plenty of work, upon which all will be soon able to begin. The plans upon which they will act will embrace the deepening and widening of the streams where that can be safely done; and then the raising of the banks, so that even in flood time the whole water may be carried across the mines without, as at present, spreading over the surface. By this means the chance of water going into the mines will be reduced to a minimum, as the area for percolation will be so greatly lessened. When this has been done the amended streams will be carefully watched, to prevent their again getting into the neglected state which now marks them. The work is being begun at the Bilston Brook, near the town of that name. The necessary arrangements are being perfected for all the other works to go on simultaneously. The works to be undertaken are neither heavy nor difficult, and, although costly in the aggregate, are not likely to be so in any one place more than another. The commissioners are, in fact, accomplishing by common arrangement what should have been done from time to time during the past 20 years.

The work that will have to be undertaken beneath ground is of a much more difficult class. Before it can be begun more information must be obtained of a nature less easy to procure than has been the information relative to the surface. The details of each district are being worked up, under the direction of Mr. E. B. MANTON, C.E., by separate mining engineers as assistants to the arbitrators, and the needed information for an award is rapidly accumulating; but as it involves details of all pumping-engines, the boundaries of all properties, and the condition of the minerals, it is clear that if the work

is to be done properly time must not be begrudged. We have authority for saying that at the earliest possible moment the arbitrators will report what must be done in respect to the underground work. Quickly thereafter the benefit of the Act will be felt. It should not be unreasonable to hope that a report affording relief to those already doing at their own cost the whole pumping that is at present going on will be made without waiting for the complete details necessary to settle the best and most economical future arrangements. That this will be done it is fair to infer not only from the character and number of the Commissioners, but also from the wide experience and practical ability of the arbitrators. As to those gentlemen, it should be stated that, although acting in perfect concert, they are all three endeavouring to facilitate the complete and speedy carrying out of the Act by dividing the work which devolves upon them mutually. Mr. DOWSWELL is conducting the law points, which are numerous enough in connection with an Act almost unique; Mr. WOODHOUSE takes charge of the mines, and Mr. HAWKESLEY the surface. The work is facilitated by convenient offices in Wolverhampton, where all the plans and papers are made and kept, and where the Commissioners hold frequent meetings, alike as aggregate and as individual committees. Respecting the important question of ways and means, it may be pointed out that the money will be raised by a uniform rate in payment of the outlays upon the surface, but that rate must not exceed 1*d.* per ton upon the mineral raised. It will at once appear that if the Commissioners have to wait for the raising of all the money in this way operations will be delayed. Hence the money needed to execute the works declared by the arbitrators to be necessary will be borrowed upon the security of the rates, which the Commissioners have the power to levy, and the repayment of the money will be spread over a series of years. To defray the cost of the work underground a separate rate will be levied upon each several district, and the amount will be graduated according to the benefit derived.

## OUR EXPORTS OF IRON AND STEEL.

At the present time, when the wages question at our collieries and ironworks is being so warmly discussed, and when in several districts strikes and complications are likely to seriously interfere with the returns just issued by the Board of Trade as to our exports of iron and steel for the last nine months. From a perusal of them it will be evident that the high prices of both the raw and manufactured material during the year so far have given a considerable stimulus to the productions of continental as well as American ironmasters. The former, indeed, are actually beating us in our own centres of production, for a quantity of plates has just been delivered in South Staffordshire from Belgium at 13*l.* 2*s.* 9*d.*, whilst the English firm that sent in a quotation for them required 19*l.* 4*s.*, making a difference of 6*l.* 1*s.* 6*d.* per ton. In Sheffield, also, some Belgian makers have secured a contract for supplying the iron required in connection with the erection of a large building. These are facts that cannot be ignored by ironworkers and miners. Returning, however, to the Board of Trade returns, we find that Germany and other continental countries are showing increased activity in the development of their mineral wealth, including ironstone and coal, as well as in their manufactures. In Germany, for some time past, an excellent business has been done in steel goods, so that our Sheffield manufacturers complain of having been supplanted by the Germans in several markets in Europe which they formerly had almost to themselves. America, too, with her immense resources of coal and ironstone, promises to become one of our most powerful competitors. That country is becoming less and less dependent upon England for both raw and manufactured goods.

Of our iron and steel exports railroad iron is about the only article that is well maintained, for railways are found to be essential to the development of the internal resources of all nations, and when completed will lead to less manufactures being required from this country. That we are not overstating the matter will be seen from a few figures from the returns. If we take iron and steel we find that our exports for the last nine months were 523,263 tons, against 896,635 tons for the same period of 1873. Of the former quantity there was sent to Germany during the first nine months of the last three years 230,311 tons, 209,855 tons, and 112,000 tons respectively. To the United States the decline has been still greater, for whilst in the first three quarters of 1872 there was sent to that country 168,933 tons, for the same period of 1873 the quantity had fallen to 87,958 tons, and this year had still further declined to 32,611 tons; these are recorded facts that are in the highest degree suggestive as to the future, and cannot be written away by any theory favourable to England so long as our workmen refuse to go with the times, and keep the price of our manufactures at a point that will admit of our maintaining our manufacturing supremacy. But it is not only in pig and puddled iron and steel that there has been a decrease in our exports. In bars, angles, and bolts our exports during the present year were 178,542 tons, against 221,644 tons for the same months of 1873, and 245,513 for those of 1872. The principal defaulters have been Germany and the United States, the latter having only taken during the present year 3049 tons, against 53,599 tons for the corresponding months of 1872, and 21,958 tons for the same months of 1873. In hoops, sheets, and boiler-plates there has been a considerable decrease in the quantities exported during the first nine months of 1872, 1873, and 1874 having been 153,311 tons, 156,448 tons, and 115,796 tons respectively. In manufactured steel goods there has been a marked decline, as our Sheffield manufacturers know. The above facts speak for themselves, and require no comment.

## OUR COAL EXPORTS.

Our coal exports will, it appears probable, again exhibit a large increase this year. Thus, in September we sent abroad 1,390,000 tons, as compared with 1,134,893 tons in September, 1873, and 1,208,405 tons in September, 1872, while in the first nine months of this year our coal exports amounted to 10,310,570 tons, against 9,444,464 tons in the corresponding period of 1873, and 10,087,253 tons in the corresponding period of 1872. The shipments of English coal to Russia have largely increased this year, having amounted to Sept. 30, to 802,412 tons, as compared with 565,305 tons in the corresponding period of 1873. Considerable deliveries of English coal were made to Germany in September, and in the nine months ending September 30, this year, we sent the Germans 1,544,250 tons, against 1,220,251 tons in the first three quarters of 1873, and 1,632,420 tons in the first three quarters of 1872. The exports of coal to France have remained comparatively stationary this year, having amounted to 1,721,301 tons to September 30, against 1,779,987 tons in the corresponding nine months of 1873, and 1,657,441 tons in the corresponding nine months of 1872. The demand for English coal in British India, albeit it costs somewhere about 3*l.* per ton, delivered in Bombay, appears to be increasing; thus we sent our Indian dependencies 447,403 tons of our coal to Sept. 30, this year, our exports in the same direction in the corresponding period of 1873 not having exceeded 353,929 tons. The working of Indian native coal, and the increased attention which has been given in official quarters to the development, maintenance, and utilisation of the forests of India do not seem, then, to have had any effect upon the demand—not very considerable, after all—which prevails among Anglo-Indians for the coal of the Mother Country.

Assuming that our coal exports move on at the same rate as hitherto for the last quarter of this year, they will amount for the whole of 1874 to 13,747,426 tons. This total would compare as follows with the exports of the previous 15 years:—

1859	7,082,029	1867	10,565,539
1860	7,412,575	1868	10,977,093
1861	7,934,832	1869	10,744,645
1862	8,380,673	1870	12,747,989
1863	8,342,500	1871	13,198,494
1864	8,900,872	1872	12,617,468
1865	9,283,214	1873	10,310,570
1866	10,142,280	1874 (estimated)	13,747,426

Should this year's estimate be substantially realised, the export of 1874 will thus be the largest on record, and will show an advance of upwards of 50 per cent., as compared with 1864. If the export increase in a similar ratio during the next ten years they will



in an aggregate of something over 20,000,000 tons in 1884. This is a point which will, no doubt, engage the attention of all who recognise the importance of economising, as far as possible, our coal supplies; but whatever opinions and theories may be developed upon the subject, there can be no doubt that the realisation of immediate profits will outweigh every other consideration with the present generation of English coalowners. The present, and nothing but the present, is, indeed, the creed of the materialists of the epoch.

It may be interesting, as 1874 is now well advanced, to estimate the probable value of this year's coal exports. This value had attained an aggregate to Sept. 30 this year of 9,186,624, or at the rate of 12,248,832, per annum. In the previous 15 years the corresponding annual value of our coal exports was as annexed:—

1859.....	Value £3,315,279	1867.....	Value £5,488,945
1860.....	3,271,631	1868.....	5,437,922
1861.....	3,652,164	1869.....	5,165,665
1862.....	3,798,727	1870.....	5,638,371
1863.....	3,752,308	1871.....	6,216,133
1864.....	4,220,883	1872.....	10,442,321
1865.....	4,400,507	1873.....	13,185,811
1866.....	5,218,498	1874 (estimated).....	12,248,832

It will be noticed that, although the exports of 1874 will probably exceed those of 1873 by about 1,000,000 tons, the value of the exports of this year will be somewhere about 1,000,000, less than those of the preceding 12 months. This easing-off in the price of our coal has, no doubt, had the effect of somewhat increasing the demand for it among our neighbours. Even now, however, they have to pay pretty smartly for such purchases as they make.

#### CLEE HILL COLLIERY.

We have received several enquiries regarding this company, and the cause of the delay in holding its annual general meeting, and having made enquiries, we are able to give the following explanation, which we think shows a legitimate and satisfactory reason for the postponement of the meeting, which would otherwise have been held some time since. It appears that when the company first commenced its operations considerable difficulty was experienced in obtaining a good manager. The duties devolving on the manager were somewhat increased and complicated by the discontent which prevailed among the men, owing to long-continued irregularity in the payment of their wages prior to the company's ownership of the collieries. The first two gentlemen who undertook the local management were appointed by the directors in reliance on testimonials which are stated to be unexceptionable. They both during their respective terms of office, however, proved themselves unable to conduct the affairs of the company successfully, and the directors were for a third time obliged to face a task which had already proved so troublesome. Many new collieries having been started, each of which, of course, required a manager, it was found impossible to secure the services of anyone on whom the board could rely. Under these embarrassing circumstances, and at the urgent entreaties of his co-directors, Capt. John Kitto agreed to take the management under his own superintendence, and this gentleman having considerable experience in the management of mines, and consummate tact in the control of unruly miners, the arrangement was such as to revive the hopes of all concerned. Capt. Kitto, however, pointed out that the effects of past mismanagement could not be rectified in a day, and that he must have time allowed him to set the company's business on a firm and satisfactory footing. He at once commenced his work, immediately reducing the cost of stores, materials, &c., and judiciously and by degrees lowering the wages. In this way, we are told, the cost of getting the coal has been materially lessened, and it is confidently believed that still further reductions are possible. Diligent operations have also been carried on with a view to opening out new faces of coal, and these have resulted most favourably in the discovery of the best coal in three new pits.

With an increased output from these sources expenses will be further diminished, and we are informed that the only object in delaying the convening of the meeting is that of getting the concern into a thoroughly flourishing condition, so that the report to be laid before the meeting may deal with good work done rather than with promises of possible improvement. As, however, the company's Acts provide that a general meeting should be held once in every year, the meeting of this company must take place before long, and we hope and believe that when the shareholders are called together they will have no reason for complaint on the score of the postponement of the meeting, or of the nature of the report submitted to them. The shares are firm at  $\frac{1}{2}$  to  $\frac{3}{4}$ .

**AUSTRALIAN PATENTS.**—We have been favoured by the Registrar General of Victoria.—Mr. Richard Gibbs—with the indexes for 1872, just issued, and embracing subject matter, alphabetical, chronological, and descriptive indexes, with all necessary drawings. In constructing stamper-shanks, Mr. R. Cockerell, of Yea, makes a worm or screw in that portion of them which is between the guides, and a rod of round iron is placed obliquely across the framing in a line with the thread of the screw or worm, so that when the shank is lifted or permitted to descend it is compelled to rotate by reason of such rod. The claims of Messrs. Hunt and Douglass's process, already familiar to the readers of the *Mining Journal*, are given. A new article of food was proposed by Mr. Tipper, of Hotham, with the not very attractive name of "Tipper's flavoured fat." The superior portions of fat and marrow of the ox are, whilst melted, flavoured with essence of meat, salt, spices, &c., then passed through filters, flannel bags, &c., by means of a hydraulic press, and used as a substitute for butter. There is notice of a patent for Messrs. Holmes and Payton's stone-dressing machinery, and there are several other patents indirectly connected with mining, which we shall hereafter refer to. The indexes are prepared with great care, and the descriptions are ample to permit of the character of the inventions being understood.

**EXPORTS OF RAILWAY IRON.**—The exports of railway iron from the United Kingdom in September exhibited a sharp decline, having amounted in that month to 61,799 tons, against 92,140 tons in September, 1873, and 93,383 tons in September, 1872. The exports presented some increase in September as regards the deliveries made to British America and Australia; but they only amounted as regards the United States to 6923 tons, as compared with 10,642 tons in September, 1873, and 37,732 tons in September, 1872. Russia, again, only took 11,196 tons in September, as compared with 29,054 tons and 24,646 tons in September, 1873, and September, 1872, respectively. The aggregate exports of railway iron from the United Kingdom to Sept. 30 this year amounted to 637,995 tons, as compared with 591,596 tons in the corresponding period of 1873, and 720,970 tons in the corresponding period of 1872. The United States only figured in this year's total for 85,454 tons, against 151,972 tons in the corresponding period of 1873, and 378,053 tons in the corresponding period of 1872. The value of the railway iron exported in September was 722,140, as compared with 1,192,825, in September, 1873, and 1,093,655, in September, 1872; and in the nine months ending Sept. 30, this year, 8,016,922, as compared with 7,783,382, in the corresponding period of 1873, and 7,511,121, in the corresponding period of 1872.

**"SPLINT" AND "CANAL" COAL.**—The Nithhill and Lesmahagow Coal Company applied to the Railway Commission for an injunction to restrain the Caledonian Railway Company from charging the applicants a higher rate per ton per mile than was charged to other collieries in the same district, thereby prejudicially affecting the applicants. The Nithhill Company work only canal coal, which they ship at the port of Granton to London, Glasgow, and other places, where it is used for gas purposes only. Other proprietors in the Lesmahagow and Wilsontown district, besides ordinary house coal, raise a species of gas coal termed "splint," which, conveyed at a lower rate than canal, was shown by the evidence to be seriously competing with the latter article. The railway company's contention was that, as canal was five times the value of splint coal, it could not be included in the same category; and, moreover, the heavy gradients on the Lesmahagow branch necessitated more costly haulage than was required for the Wilsontown and other colliery productions. The Chairman, after reviewing the facts of the case, said it appeared to the Commissioners that splint and canal could

not be regarded but as competitive, and there ought not to be any difference in the rates of their carriage. The injunction would, however, provide that due regard should be had to circumstances which made a difference in the cost of carriage. The decision would in no way affect house coal.

**COLLIERY AGENTS FINED FOR NEGLECT OF DUTY.**—At Ashby-de-la-Zouch, on Saturday, Mr. Leech, of Derby (instructed by Mr. Evans, Her Majesty's Inspector of Mines), attended in support of six complaints against the defendant for non-compliance with various provisions of the Mines Regulation Act, 1872.—Mr. Dewes appeared for the defence. Mr. Leech stated that the defendant, Mr. Wm. German, was the agent of the Blackfordby Colliery, and as long ago as 1869 the Inspector had felt it his duty to reiterate to him upon the want of discipline and regularity at the pits. These complaints were repeated in the present year, and by the express authority of Mr. Secretary Cross these proceedings were instituted. The first charge was that the defendant had not caused to be posted up in a conspicuous place at the mine an abstract of the Act, with the special rules. The second complaint was that he had not securely fenced certain portions of the machinery of the mine. The third that he had not kept a report book of the result of examinations of the machinery and other works of the mine at No. 1 pit. The fourth that he had not kept at the office an accurate plan of the workings of the mine. The fifth that he had commenced opening a new shaft without giving the Inspector notice within two months of the commencement, and the sixth that he had not kept a report book of the result of examinations of the machinery and other works at No. 2 pit of the mine. In support of the first charge Mr. Leech called William Arthur Henry Stokes, an Inspector of Mines, who stated that he visited the Blackfordby Colliery on Sept. 22, and the abstract of the Act and special rules were not posted up at the colliery. Extracts from the old Act, which was repealed, were stuck up in the engine-room, but the new Act had not been complied with, and the undersheriff admitted the fact when his attention was called to it. Mr. Dewes cross-examined the witness as to his visits to the colliery, and then addressed the Bench for the defendant, urging that the magistrates had no jurisdiction in the case. He quoted the latter part of the 26th section, and contended that where less than 30 persons were employed at a colliery the Act did not apply, and said the defendant had always contended that this colliery did not come under its provisions, that, in fact, it was not a mine within the meaning of the Act. Mr. Leech replied, arguing that this part of the Act merely applied to the appointment of certificated managers, the section quoted by Mr. Dewes being quite clear upon the point. He contended that every mine coming within the 3rd and 72nd sections of the Act was liable to its provisions, and, moreover, the defendant had virtually admitted it by his letters. The Bench immediately decided that this was a mine within the Act. Mr. Dewes said after that ruling the defendant had no alternative but to plead guilty to all the charges, unless Mr. Leech would withdraw any of them. This was declined.

Mr. Leech then opened four informations against Capt. Perry, the owner of the Plough Platts Colliery at Blackfordby. The first was for not posting up the abstract and rules; the second for not having a report book containing the result of examinations of the machinery and working; the third for not keeping a register and entering therein the name, &c., of Henry Baker, a boy under the age of thirteen, employed at the pit; and the fourth for not securely fencing the top of an old shaft. Mr. Dewes appeared for the defendant, and said after the magistrates' ruling in the last case, he had advised Capt. Perry to plead guilty to all the charges, and this was done. The Bench fined each defendant 1s. in each case, or 10s. in all, exclusive of costs.—*Derby Mercury*, Oct. 14.

**EMMA SILVER MINE.**—At the meeting of shareholders held on Wednesday, in compliance with the request of the holders of more than 10,000 shares (fully reported in the Supplement to this week's *Journal*), Mr. Hutton, who occupied the chair in the absence of Commissary-General Gardiner, the Chairman of the company, stated, in reference to the first clause of the requisition, that neither he nor his colleagues saw any reason for requesting the resignation of Gen. Gardiner, who is at present in the United States, endeavouring to effect a settlement with the vendor and others. As to the second clause, which was to the effect that no compromise should be concluded with any parties between whom and the company legal proceedings are now pending, he expressed himself as entirely agreeing with the requisitionists. With reference to the clause which sought to empower the directors to afford Mr. McDougall the right to use the name of the company, the Chairman declared that such an act being beyond the power of the directors to perform, and therefore illegal, he must, acting on his legal adviser's opinion, decline to put it. Considerable discussion ensued in regard to this point, but eventually, upon the strong recommendation of the Chairman, Mr. Burdand, and others, it was decided by a majority of the shareholders to adjourn the meeting to that day month, in order to afford sufficient time for the return of the Chairman of the company and Mr. Snell, it being intimated that the latter gentleman has gathered during his stay in the States an immense amount of valuable information relative to the property of the company. At the termination of this meeting Mr. McDougall endeavoured to constitute another meeting, and though it can hardly be said he succeeded, he went through the form of passing his three resolutions. The proceedings, however, owing to their illegality, must prove void of effect.

#### REPORT FROM CORNWALL.

Oct. 15.—We are much in the same position of expectancy which has now lasted so long. The reduction of the prices of coal and materials, and the improvement in the matter of labour which was noticed last week, have placed many mines on the verge of prosperity, which a really moderate advance in the tin standard would ensure. What, then, are the chances of that advance? At the Rosewall Hill meeting the other day there were present Mr. Wellington representing Messrs. Bolitho, and Mr. Rouse representing Messrs. Daubuz, and these gentlemen appeared to agree pretty closely that for the time prices will remain very much where they are, and that whatever fluctuations may take place will be confined within very narrow limits. The outlook of a smelter is by no means the same thing as that of a miner, and we should be inclined to take rather a more sanguine view, and, at any rate, to believe that in the forecasts of Messrs. Wellington and Rouse we have what may be considered the worst that lies immediately before us—a continuance of the present status quo. If that be so, it is clear that relief in the case of those mines which are not paying costs, and dividends in the case of those which are, must be looked for in the direction of more economical production. We have very little doubt that in the majority of tin mines black tin could be produced some 5s. per ton, at least, cheaper than it now is, if all the means and motives of economy were in active operation. But this is not a matter for which managers are alone responsible; over and over again has it been seen that adventurers have declined to make a small present outlay because the gain may not be immediate, though in the long run certain and great. This arises in part, no doubt, from the want of continuous interest, which in these jobbing days is so common among shareholders. Persons who look upon their shares in the light of an investment of a permanent character are more inclined to deal liberally with their property; those whose holding is ephemeral are too often given to treat it as a sponge, to be squeezed dry for them, the next comer taking his chance. Other things being equal, that mine and those shareholders far best for which and whom the transfer-book is seldom opened.

It is easy to see what needs to be done to tide mining over the present depression; the question is how to do it. Nothing is needed but economy—that economy which is produced alike by a careful guard over the expenditure, as well as by the production of improved results as the consequence of increased skill. Let us avoid as much as possible deficits and calls; small profits, and indeed even balances, will enable any mine to be kept going until the better times, which surely will arrive soon; and if there cannot just now in most cases be good dividends let the effort be, as far as is possible, to dispense with calls.

We are sorry to find that the proceedings at the recent Rosewall Hill and Ransom meeting should have been of such a disorderly character. What is to be gained by such violent squabbles over such incidental and minor matters as the appointment of a surgeon it is difficult to see, but it is easy to discover what may be lost—confidence and esteem. A mine meeting may be a business meeting without being a bear garden.

On Monday last the Okehampton and Lydford section of the South-Western Railway, which was made by the Devon and Cornwall Railway Company, was opened for traffic. It is an exceedingly heavy bit of line, skirting Dartmoor all the way, and really abounding in heavy cuttings, long banks, and high viaducts. In itself it will not have much influence upon mineral traffic, but it is part of a scheme which embraces the construction of a railway from Launceston to Bodmin, by Camelford, which would accommodate the North Cornwall slate quarries, and open up an important mineral district.

Capt. Thomas Bennetts, of Morvah Consols, has been fined at the instance of Dr. Le Neve Foster, for neglecting to give information

of a death which occurred at the mine under his management. A similar charge has been brought against Mr. P. Skewis, of Florence Consols. Dr. Foster is administering the Act with firmness, but at the same time with consideration.

There has been a rumour afloat that ere long the tin trade will cease to have associated with it one of its best-known names. How far this is true we are not in a position to state, but should it be realised it will make a great change in the current of the traffic. If the rumour be well founded we shall soon hear more of it, but the retirement will be a matter for regret.

P.S.—The intelligence that the standard has to-day been advanced 2s., received since this letter was commenced, seems to bear out our view of the case, rather than that expressed at the Rosewall meeting. It is somewhat curious, at any rate, that within so very few days after we have been told that there is little to expect that matters should commence to take a change for the better.

#### REPORT FROM SCOTLAND.

Oct. 13.—Since the date of our last report the Warrant Market has been dull, with a downward tendency. From Wednesday to Friday the price ranged from 88s. to 86s. 3d., closing for the week at the lower price. On Monday there was more eagerness to sell, and transactions took place from 85s. to 83s. 9d. Yesterday the market opened with a dull tone about 83s. 6d., but subsequently improved to 84s. 6d., and receded again to 83s. 6d., closing with sellers at that price. To-day there was little change in prices, 83s. 6d. to 84s. paid, closing at the best. Makers' iron is now becoming a little more plentiful, and the undercurrent prices show reduction as compared with last week.

G.m.b. at Glasgow (deliverable alongside)	No. 1.	No. 2.
Gartsherrie ditto	110 0	83 6
Coltness ditto	110 0	83 6
Summerlee ditto	105 0	83 6
Carnbroe ditto	96 0	83 6
Monkland ditto	92 0	83 6
Clyde ditto	92 0	82 6
Govan, at Broomielaw ditto	92 0	82 6
Langloan, at Port Dundas ditto	110 0	85 0
Calder ditto	112 6	84 0
Glengarnock, at Ardrossan ditto	100 0	84 0
Eglinton ditto	90 0	80 0
Dalmellington ditto	90 0	80 0
Carron, at Grangemouth, selected, ditto	105 0	—
Shotts, at Leith ditto	110 0	85 0
Kinnell, at Boness ditto	97 6	80 0
Baird iron .....	£10 0	—
Nail rods .....	10 0	—

SHIPMENTS.	Tons
Week ending Oct. 11, 1873 .....	15,492
Week ending Oct. 10, 1874 .....	10,037
Decrease .....	5,185
Total decrease since Dec. 25, 1873 .....	151,182
Imports of Middleborough pig-iron into Grangemouth:—	
For the week ending Oct. 10, 1874 .....	2,990
For the week ending Oct. 11, 1873 .....	1,205
Increase .....	1,785
Total increase for 1874 .....	43,349

The prices of Pig-Iron keep easier, with a continued decrease in the shipments, and an increase in the furnaces to 117. The autumn shipments are drawing to a close, so that there is no great chance of a rally in prices unless there is some unusual development of the trade. The shipments of Manufactured Iron during the week from the Clyde were both numerous and varied, and the works are still employed on the same descriptions of iron. The reduction in puddler's and millmen's wages, noticed last week, have been acquiesced in, with the exception of Rochsulloch, where the men have gone on strike, well knowing their employers were engaged on time orders which could not stand over. They are still out. The trade for the remainder of the year is expected to be very limited, from anything that can be learnt in the meantime, but still makers are hopeful.

The domestic demand for Coals is improving, and prices for best descriptions are well maintained, but for shipping qualities the demand is quieter, unless for immediate delivery. From the Scotch ports 58,802 tons were shipped last week, against 33,233 tons in the same week last year.

There are movements amongst the miners for an advance of wages in one or two districts, and measures are to be taken to press their claim for an advance of 1s. per day, but what these are is not stated. The masters, being consulted, have informed their men that they can give no advance till a rise takes place in the price of coals.

At the West of Scotland Association of Gas Managers an interesting paper was read on the Absorption of the Illuminating Constituents in Coal Gas by the Heavy Hydrocarbons, by Mr. Wm. Young, Paisley. In this paper some entirely new and important problems in gas-making were introduced, which gave rise to some discussion, in which Mr. Wm. Key (the late president) chiefly took part. A paper was also read on Retort Setting, by Mr. Henry Walker, Saltcoats. Other business having been disposed of, the members of the association adjourned to Musselburgh Gasworks, where they were shown the new patent system of carbonising coal, invented by Messrs. Young and Scott.

**CONVICTION UNDER THE MINES REGULATION ACT.**—A case (the first in the county of Linlithgow since the passing of the Act) was tried at the Sheriff Court, Whitburn, on Wednesday, George Simpson, manager of the Benhar Collieries, it was alleged, had failed to comply with the provisions of the Act—first, by neglecting to provide an adequate ventilation in No. 3 pit; and secondly, by allowing an entrance to a part of the said pit not in working to remain improperly fenced. Mr. Ralph Moore, Government Inspector of Mines, prosecuted. Mr. Simpson pleaded not guilty, but the sheriff, finding the second charge proved, fined defendant 10s. Notice was given of an appeal.

#### THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

Since my last report there has been a very marked decrease in the amount of business done in the market, and prices are generally lower, but in most cases only slightly. An advance in prices is, however, not improbable, as the tone is now much steadier than it was at the beginning of the week. Notwithstanding the Bank rate having been advanced 1 per cent. to-day (now 4), Americans have shown great depression from sundry causes—rumours of the Emma being to be wound up, disorderly meetings, &c. In miscellaneous the only movement of importance is an advance in Conglog Slate and Slab shares to 10s on a good demand for the shares, which, it is said, will soon be scarce. A detailed list of the several days' business follows:—

On Thursday last, as stated at the close of my last week's list, the market became flat, and the business done was nearly at lower prices all round. Arncliffe still offered at par; Benhar firmer, done at 15, closing 15 to 15½. Bolekow Vaughan, A, also firmer at 55 to 55½; Canadian Copper Pyrites done at 51s. 3d. down to 48s. 6d., closing 48s. to 49s. Ebbw Vale dull at 23½ to 23. Emma done at 25s. 6d. and 25s., closing 25s. to 27s. In Flagstaff a large business was done at 2½, 2 9-16ths, and 2½, closing 2½ to 2½. Javall unchanged at 4s. 9d. 8s. Glasgow Caradon shares were pressed for sale, the recent rise having brought in large sellers, done at 32s. and 30s., closing 29s. 6d. to 30s. 6d. Port Washington shares weak at 61s. 6d. to 65s. Huntington shares flat at 63s., then 64s., closing 63s. 6d. to 66s. 6d. Lechore and Caplethead done at 8, closing 8 to 8½. Marbella shares done at 5½ and 5 5-16ths, closing 5½ to 5½. Merry and Cunningham done at 75s. and 71s., closing 73s. 6d. to 74s. 6d. Monkland ordinary done at 100s. and 99s., closing 98s. to 99s. Guaranteed Preference better, done at 8½ with buyers oversellers asking 8½. Nidderle firm, done at 50s. 6d., closing 50s. 6d. to 51s. Omoa and Cleland done at 65s., closing 65s. to 66s. Tharsis done at 27½ and 27½, closing 27½ to 27½. New shares done at 19, closing 19 to 19½. Young's Paraffin shares better at 5½ to 5½. Scottish Wagon shares changed hands at 12, and York Peninsula shares at 9s. 9d. United States Rolling Stock ½ lower, at 13½ to 13½.

On Friday the market opened better, and was even stronger, but became flat again, and remained so to the close. American shares particularly depressed on a statement that the Emma is to be wound up at once. Benhar, 15 1-16th to 15½. Bolekow Vaughan, A, done at 55½. Canadian Copper Pyrites done at 50s., closing 49s. 6d. to 50s. Ebbw Vale done at 23, closing 23½ to 23. Emma done at 25s. 6d. and 25s., closing extremely flat at 15s. to 20s. Flagstaff done at 2½, closing 2 to 2½. Glasgow Caradon opened good, and were done at 31s. 6d. and 32s., but went flat again in sympathy with the others, and close 30s. to 31s. Huntington done at 63s., closing 63s. to 68s. Javall, 4s. 9d. to 5s. 3d. Last Chance done at 15s., closing 15s. to 20s. Lechore and Caplethead done at 8½ and 8, closing 7½ to 8 1-16th. Marbella done at 5½, closing 5½ to 5½. Merry and Cunningham opened at 74s., but gradually declined, and close 70s. 6d. to 71s. Monkland ordinary done at 91s. and 98s., closing 97s. 6d. to 98s. 6d. Nidderle firm, done at 52s. and 53s. 6d., closing 51s. 6d. to 52s. Omoa and Cleland changed hands at 65s. Tharsis done at 27½, 9-16ths, and ¾, closing 27½ to 27½; new shares done at 19, closing 19 to 19½. Young's Paraffin, unchanged at 5 5-16ths to 5 1-16ths.

On Saturday a fair amount of business was done, and prices were generally steady. Benhar done at 15 and 15 1-16th, closing 15 to 15½. Bolekow Vaughan, A shares firm, done at 55½, closing 55½ to 55½. Canadian Copper Pyrites done at 51s., then 50s., afterwards improving to 51s. and 51s. 6d., closing 50s. 6d. to 52s. Chillington Iron ½ lower, at 6. Emmas opened at 20s., then improved to 25s., but declined again to 23s. and 20s., closing 18s. to 20s. Flagstaff



lower, at 1½ to 2. Glasgow Caradon lower, at 20s. 6d., closing 20s. to 30s. It is announced that the next sale of ore is computed to be 245 tons, which will be sold on the 22nd inst.; this will likely not be considered very favourable, as it compares with a very large sale at this time last year—308 tons—and the price realised will probably not be much higher per ton. Port Washington done at 62s. 6d., closing 62s. to 63s. Huntington done at 66s. and 66s. 6d., closing 66s. to 67s. Lead ¼ lower, offered at 20s. Javali unchanged, at 4s. 9d. to 5s. 3d. Last Chance, 17s. 6d. to 20s. Leochore and Caplethra done at 5s. Marbella done at 5½ to 5 7-16ths, closing 5 7-16ths to 5½. Merry and Cuninghame done at 71s. and 70s. 6d., but close better, at 71s. to 71s. 6d. Monkland ordinary done at 93s. closing 93s. to 94s. Niddrie done at 51s. to 51s. 6d., and 52s., closing 51s. to 52s. Panulillo ¼ lower, at 20s., and Rio Tinto ¼ lower, at 8½. Scottish Australian steady, at 1¼ to 1½. Tharsis closed 27½ to 27½; new shares lower, at 18 15-16ths to 19. U.S. Rolling Stock again ¼ lower, at 12½ to 13½, in sympathy with the depression in Erie and Atlantic securities.

On Monday, being contango day, little business was done, and prices were generally lower. Benhar, 15 to 15½; an odd lot of Bolekow, Vaughan, A. changed hands at 55. Canadian Copper Pyrites done at 52s. 6d., closing 52s. to 53s.; Chillington Iron ag ¼ lower, at 5½ to 5½; Conglog Slate and Slab are being enquired for, and have advanced to 1½, but no buyers; Glasgow Caradon done at 29s., closing 29s. to 30s.; Huntington better, at 67s. and 67s. 6d.; Javali lower, wanted at 4s. 6d., sellers at 5s.; Last Chance advanced in the absence of sellers to 25s.; Leochore and Caplethra done at 5s.; Merry and Cuninghame firmer, done at 71s. 6d., closing 72s. 6d. to 73s. 6d.; Monkland ordinary done at 93s., closing 93s. 6d. to 94s. 6d., or 3s. per share lower; Niddrie done at 51s.; in Tharsis a large business was done between 27½ and 27½, finally closing 27½ to 27½. The rates of contango done at 18½, ¼, and 13-16ths, closing 18½ to 18¾. The rates of contango current to-day were as follows: On Glasgow Caradon: 1d. on Port Washington: Pyrites: 1d. even on Emma: 2d. on Monkland ordinary: 1s. 6d., 2s. 6d., 3s. 3d., 2½d., 2s. 1½d., and 2s. on Tharsis: 1s. 3d., 6d. on Tharsis new: 3½d., 3d. on Young's Paraffin: 2s. on London and Glasgow Engineering—Backwardations: 1d. even on Marbella: even, 1d., 1½d., 2d., 2½d. on Merry and Cuninghame: 5s. on Shotts. The principal change in these rates is in Tharsis, the contangos on which are considerably heavier. The making-up prices this account, compared with those of last account, show a fall of 8s. 6d. on Canadian Copper Pyrites, 10s. 6d. on Emma, 2s. on Huntington, 3s. 6d. on Marbella, 4s. 6d. on Onma and Cleland, a rise of 6d. on Port Washington, 1s. on Monkland ordinary, 15s. on Tharsis; 6s. 3d. on Tharsis new, 8s. on Shotts, and 1s. 3d. on Young's Paraffin.

On Tuesday the market was neglected, but prices ruled steady. The account for settlement, Oct. 30, opened to-day; Tuesday, Oct. 27, will be contango day. Benhar, 14½ to 15 Bolekow, Vaughan, A. done at 55½, closing 55 to 55½. Canadian Copper Pyrites done at 52s., closing 51s. 6d. to 52s. Emma shares better, done at 29s., closing at 29s. to 21s. Five coal buyers at 5½. Glasgow Caradon done at 29s. and 29s. 6d., closing at 29s. 6d. to 29s. Huntington done at 66s., closing at 67s. 6d. to 68s. 6d. Javali lower, at 4s. 3d. to 4s. 9d. Last Chance changed hands at 20s. 3d. Leochore and Caplethra done at 5½, being ¼ lower. Merry and Cuninghame firm, at 73s. to 74s. Monkland ordinary done at 93s., closing at 92s. 6d. to 93s. Niddrie, 51s. to 52s. Tharsis done at 27 11-16ths and ½, closing at 27½ to 27½. New shares 18½ to 19. Yorke Peninsula ordinary, ¼ to ½.

On Wednesday the market was again inactive, but rather more business was done. Benhar done at 15, closing 14½ to 15½. Canadian Copper Pyrites opened good, at 53s. and 53s. 6d., but from that gradually declined to 51s., closing 50s. 6d. to 51s. 6d. Chillington Iron firmer, done at 6, closing 5½ to 6½. Emma lower, at 19s. 6d. to 20s. Glasgow Caradon improved, being done at 29s. 6d. and 30s., closing 29s. 6d. to 30s. 6d. Huntington done at 68s., closing 67s. 6d. to 68s. 6d. Lead offered at 20s., but no buyers. Javali, 4s. 6d. to 4s. 9d. Merry and Cuninghame done at 73s., closing 73s. just. Nant-y-Glo and Blaenau preferred changed hands at 44½, closing 44 to 45. Niddrie, 51s. to 52s. Tharsis done at 27½, 27½, and 27 9-16ths, closing 27½ to 27½; new shares done at 18½, closing 18½ to 19½. London and Glasgow Engineering done at 25, being ¼ lower than last quotation 18½. A few shares of North Cornwall Kaolin are offering at ¼ premium. Companies of this description appear to be uniformly successful—in fact, we scarcely ever hear of the failure of a clay company, and, on the other hand, I hear of one of the 25½ shares of which are quoted at 100s., buyers. It is seldom shares are on offer, the amount of capital required to open such works being very small, and generally furnished by private enterprise. Many have made large fortunes in the past few years in china-clay works, and it is not the profits of at least 30 per cent. may be secured by a judicious investment in this industry. The directors of North Cornwall Kaolin are at present extending the works, and erecting machinery to utilise a valuable discovery of felspar sand which has been made on the company's property; and it is calculated that 400 tons of it can be got without difficulty every month, and find a very ready market, the bulk of which will be profit. This is in addition to the regular shipments of china-clay, and for this latter commodity the demand, and market value also, is gradually advancing. The company have plenty of water all over the property for the requirements of the works, as also peat, which can be made available for drying the clay and many other purposes of great importance. The capital of the company on which dividends have to be paid is very small (4000£), and, certainly, with good management, large profits may fairly be expected. Subjoined will be found the latest prices:—

Amount	Amount	Name	Latest
of share.	paid-up.		price.
410	4	Arnstion Coal (Limited) .....	15
10	10	Benhar Coal (Limited) .....	15
100	5	Bolekow, Vaughan, and Co. (Limited) ..	55
10	10	Chillington Iron (Limited) .....	111s.
10	10	Chillington Iron (Limited) .....	6
32	29	Ebbw Vale Steel, Iron, and Coal (Limited)	22½
10	3	Pife Coal (Limited) .....	5½
10	6	Glasgow Port Washington Iron and Coal (Limited)	62s. 6d.
10	10	Doitto All paid .....	6
10	10	Leochore and Caplethra (Limited) .....	7½
10	10	Marbella Iron Ore (Limited) .....	5 7-16
10	10	Merry and Cuninghame (Limited) .....	73s.
10	10	Doitto All paid .....	10
10	10	Monkland Iron and Coal (Limited) .....	93s.
10	10	Doitto 7 per cent. Guaranteed Preference	8½
100	100	Nant-y-Glo and Blaenau Ironworks pref. (Limited)	44½
10	2	Niddrie Coal (Limited) .....	51s. 6d.
10	4	Onma and Cleland Iron and Coal (Limited)	65s.
50	50	Shotts Iron .....	77
10	4	Doitto New, issued at 2½ premium .....	6
COPPER, LEAD, SULPHUR, TIN.			
10	7	Canadian Copper Pyrites (Limited) .....	51s.
10	10	Doitto All paid .....	6½
10	7	Cape Copper (Limited) .....	27
5	5	Drake Walls Tin and Copper .....	5
2	2	Dunsley Wheel Phoenix Tin (Limited) ..	15s.
2	25	East Black Craig Lead (Limited) .....	25
1	1	Glasgow Caradon Copper Mining (Limited)	30s.
1	15s.	Doitto New .....	22s. 3d.
10	9	Huntington Copper and Sulphur (Limited)	62s.
1	1	Islay Lead (Limited) .....	20s.
25s.	23s.	Kapunda Copper (Limited) .....	1
4	4	Pannello Copper Mining (Limited) .....	1
10	10	Rio Tinto (Limited) .....	8½
10	10	Russian Copper Mining (Limited) .....	2½
1	1	Scottish Australian Mining (Limited) ..	15s.
10	10	Doitto New .....	15s.
10	10	Tharsis Copper and Sulphur (Limited) ..	27
1	1	Doitto New .....	18½
1	1	Yorke Peninsula Mining (Limited) .....	8s. 9d.
1	5s.	Doitto 15 per cent. Guaranteed Preference	¾
GOLD, SILVER.			
20	20	Emma Silver Mining (Limited) .....	20s.
10	10	Flagstaff Silver Mining (Limited) .....	17½
2	2	Javali Gold Mine (Limited) .....	¾
5	5	Last Chance Silver Mining (Limited) .....	20s. 3d.
OIL.			
10	7	Dalmeny Oil (Limited) .....	5½
5	5	Midlothian Mineral Oil (Limited) .....	3
10	8	Uphall Mineral Oil (Limited) .....	4
10	8½	Young's Paraffin Light and Mineral Oil (Limited)	5 5-16
MISCELLANEOUS.			
10	10	Conglog Slate and Slab (Limited) .....	10½
10	10	Highland Peat Fuel (Limited) .....	10
40	25	London & Glasgow Engineering & Iron Shipbuilding	25s.
1	1	North Cornwall Kaolin (Limited) .....	22s. 6d.
20	7½	Peruvian Nitrate (Limited) .....	6
10	10	Scottish Wagon Company (Limited) .....	12
1	1	Doitto New .....	22s.
20	20	United States Rolling Stock .....	13

NOTE.—The above list of mines and auxiliary associations is as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in this list, they will be good enough to communicate the name of the company with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, Oct. 18.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

Oct. 15.—The Iron Trade in both Derbyshire and Yorkshire has undergone but little change during the past week. There has been no falling-off in the production of pig at the works to the north of Chesterfield, or on the Erewash Valley line, whilst the mills and foundries have been kept very well going. The foundries at Staveley are working very well indeed, being busily engaged in the production of pipes and other specialities for which the company has long been noted. The staple trades of Sheffield are very much as they have been for some time, but there is rather more doing in fine cutlery and plated ware for home consumption, as is usually the case before Christmas. There has for some time past been considerable activity at the malleable ironworks situated at Kelham, belonging to the Messrs. Crowley and Son, who manufacture a variety of goods that equal in every respect both for cheapness and finish the best productions in steel. The coal trade is good for the season, and a large tonnage of steam qualities is being sent to Hull and

Grimsby for shipment to the North of Europe, as well as to France. Prices have undergone but little change. There has been considerable improvement in the demand for London during the past month, but taking the first nine months of the year there has been a most decided falling-off, as compared with the same period of last year. This will be seen from a review of the tonnage sent from Yorkshire and Derbyshire for the first three-quarters of 1873 and 1874.

CONVICTION OF A COLLIERY MANAGER AND DEPUTIES FOR NEGLIGENCE.—On Monday a case of considerable importance to colliery owners was brought before the Dewsbury Bench of Magistrates by Mr. Frank Wardell, her Majesty's Inspector of Mines for Yorkshire. He summoned William Haigh, the manager of the Gawthorpe Colliery, near Ossett, for violation of the 1st General Rule, which requires that an adequate amount of ventilation shall be constantly produced in every mine, so as to dilute and render harmless noxious gases, so that all places shall be in a fit state for working and passing. It appeared that owing to the want of sufficient ventilation an explosion took place at the colliery in August, by which one man was killed, and since that time very little attention to ensure the safety of the men had been made. The facts were fully admitted by Haigh, who pleaded guilty, and was fined 5£, with costs, in default two months' imprisonment. A deputy named John Oates was also summoned for violation of the 6th General Rule, which requires that where gas has been found in any part of a mine the men working there shall be withdrawn, and a report of the same shall be recorded in a book kept for the purpose. Isaac Oates, another deputy, was also charged with a violation of the 13th and 14th Special Rules, by not placing danger signals where gas had been found. The charges were fully proved by Mr. Wardell, and both defendants pleaded guilty. John Oates was fined 2£ and costs, or two months' imprisonment; and Isaac Oates 3£ and costs, or three months' imprisonment.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Oct. 15.—The Iron Trade of South Staffordshire is a degree more active than we have recently been able to describe, and most of the leading firms have their order-books tolerably well filled. The market for common and medium class pigs is decidedly stronger, and prices have improved 2s. 6d. to 5s. per ton. Best all-mine are quoted 5½ to 5½ 10s. per ton for hot-air, but a fair quality pig may be had at 5½. Shropshire cold-blast pig is in steady demand, and firm at the quoted rate. Additional blast-furnaces continue to be re-lighted in various parts of the district, the total number now blowing being 72. Messrs. M. and W. Grazebrook, of Netherton, will have another in blast very shortly. The finished iron makers are receiving a fair number of orders for sheets, plates, rods, and strips. The standard of 111 for bars is well maintained by Messrs. Barrows, Bradley, Thorneycroft, Williams, and Bagnall, the British Iron Company, and other leading firms. Earl Dudley's price is, as usual, 12s. 6d. extra. Common bars are selling at 9½ 15s. to 10½; some transactions have taken place as low as 9½ 10s. per ton. Hoops range from 12½ to 12½ 10s., and gas strip from 10½ to 10½ 10s. per ton. The range of prices between best and common iron is much smaller than usual, both in the pig and finished departments of the trade, an obvious result of the comparatively great cost of production.

The Coal Trade of South Staffordshire is improving steadily, though somewhat slowly. Earl Dudley and other leading firms in the thick-coal district are realising full list rates, but on the part of some of the smaller coalmasters underselling is still reported to the extent of 1s. 6d. to 2s. per ton. The demand for thin coal around Willenhall and Darlaston is only quiet, and the competition for orders causes some irregularity in prices to prevail.

The Homer Hill Collieries, at Cradley, near Stourbridge, hitherto worked by Messrs. Swindells, have been acquired by the promoters of a new joint-stock company, to be called the Homer Hill Colliery Company (Limited). The capital is fixed at 100,000£, in 10£ shares. The estate contains valuable seams of thick, brooch, and heathen coal, ironstone, and fire-clay. The plant is capable of raising 4000 tons of minerals per week, but it is proposed to increase the available output very considerably.

Prominent attention is being given to the fact that some large fitch-plates, required by Messrs. Perry and Son, of Highfield Foundry, Bilston, have been obtained from Belgium at 6½ per ton under the lowest English quotation. When a few simple facts are considered there is nothing in the circumstance to excite either surprise or apprehension. The plates referred to were of extraordinary dimensions, and were required to carry the roof of a new machine shop. Such plates are very rarely asked for in England, and our works are not adapted for their production, but continental architects are constantly including them in their specifications, and the demand both in Belgium and France is sufficient to justify the adaptation of works for that class of work. Seeing that only four plates were required in this instance, it is not surprising that English makers should ask a price sufficient to repay them for the extra trouble and disarrangement of their works which the execution of such an order would have involved. It should be added that the Belgian plates, although suited to the present purpose of Messrs. Perry, are of inferior quality.

The tendency of the local stock and share market is easier. Sandwell Park Colliery (10£) shares are 53; Cannock and Huntington, 4 dis.; John Bagnall and Sons (Limited), 7½; Chillington Iron, 6½; Patent Shaft, 5½ prem.; Pelsall Coal and Iron, 3 to 2 dis.; Ivy House and Northwood Colliery, 1½ dis.

The Earl of Dartmouth, Viscount Lewisiam, and a distinguished party visited the Sandwell Park Colliery last week, and inspected the workings and plant with great minuteness. Mr. Henry Johnson conducted the party, who expressed themselves well pleased with all they had seen.

The North Staffordshire Iron Trade is quiet, buyers holding back orders to see the effect of the movement in the south part of the county on prices. At present there is no indication of a change in quotations here. Crown bars are 9½ 15s. to 10½ per ton. The finished ironworks are for the present in steady operation.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

Oct. 15.—Advices in regard to the Iron Trade are still much of the same discouraging nature. New orders are coming to hand but slowly, and the week has been, like several preceding ones, very quiet. It is hardly necessary to state the cause of this quietude, as it would only be—to an extent, at least—a repetition of what has been said in previous reports. Prices are still the principal difficulty. Buyers seem to cling tenaciously to the belief that prices must further recede, notwithstanding that manufacturers seem to have as much as they can do to turn out finished iron at the quotations now current, and there is little prospect of the cost of manufacture being less than at present, or at least to such an extent as to enable makers to sell their iron at appreciably lower prices than they do now. It is difficult, therefore, to perceive upon what ground purchasers base their expectations; and there is one thing a little consoling, however—that finished-iron masters take things as they come without a great deal of grumbling, and they still think that there are better times for them a little ahead. The exports of iron have been small during the past week. The total quantity of iron cleared to the foreign markets from this district was 18,272 tons, of which Cardiff exported 7105 tons; Newport, 8765 tons; and Swansea, 2402 tons.

The disputes at the Landore Steelworks continue, and the only present prospect of a settlement is by the masters giving in to the men. The latter appear determined to resist any further reduction, on the ground that the state of the trade does not warrant it, and it is understood that they are supported in this by the Union. The activity of the coal trade makes up to some extent for the depression of some other branches of the trade of the district, and keeps the district from falling into the quietude which otherwise would be experienced. A brisk demand is kept up for all qualities, and prices are maintained. The exports last month were as annexed:—Cardiff, 24,825 tons, against 22,827 tons in September last year; Newport, 34,145 tons, against 22,571 tons; Swansea, 48,835 tons, against 47,041 tons; and Llanelly 8852 tons, against 7843 tons. The

coal shipments coastwise were as follow:—Cardiff, 68,539 tons, against 83,813 tons in September, 1873; Newport, 56,425 tons, against 76,091 tons; Swansea, 26,802 tons, against 27,103 tons; and Llanelly 9120 tons, against 15,994 tons. Cardiff also exported 10,266 tons of patent fuel, and Swansea 18,316 tons.

Richards and Company, referred to last week, has been very successful, and the allotment is fixed for next Tuesday. Intending subscribers will be entitled to have their applications considered up to that day. The current profits are equal to more than 25 per cent. dividend.

#### BLASTING EXPERIMENTS IN NORTH WALES.

A series of highly interesting experiments with a new explosive for blasting purposes took place at the little town of Minera, near Wrexham, on Wednesday, and the importance attached to the event was evidenced by the fact that nearly 500 civil engineers and others interested in mining operations were present. The new powder, which has not yet been patented, is the invention of Messrs. Curtis and Harvey, the well-known gunpowder manufacturers, and among the special advantages claimed for it are that its explosive force is exceptionally great; that it throws off very little smoke or injurious gas; and that it is quite safe for use as ordinary powder, not being liable to explode by increased temperature, exposure to the sun, percussion, or self-ignition. Some experiments on a small scale have already been made, and it is stated, were attended with complete success, but those of yesterday may be considered as the real test of the merits of the new powder. The experiments commenced shortly after one o'clock, by which time a very large number of spectators had collected and stationed themselves on the hills surrounding the quarry where the proceedings took place. The property of Mr. Lester, and is one of the largest limestone quarries in the district. Sir Robert and Lady Cunliffe, Major Cornwall West, Mr. W. H. Gladstone, M. P., Mr. Whalley, M. P., Mr. Osborne Morgan, Q. C., M. P., and other of the gentry of the neighbourhood, were amongst those present. The first experiments were for the purpose of demonstrating the force of small quantities of the powder, and were made with various charges ranging from ½ lb. to 3 lbs. At this time these were most picturesque and striking. On the crests of the hills around crowds of people had assembled, waiting for the upheaving of the gigantic mass of rock below, while here and there on the slopes could be seen small knots of spectators, chiefly miners, who, from their familiarity with blasting operations, appeared almost to despise any danger from the falling mass. The fuse was fired at 25 minutes to four, and for the next 20 minutes the spectators gazed almost unceasingly at the face of the rock, and watched the blue smoke of the fuse curling out from the entrance to the quarry. At the expiration of that time the rock was seen falling slightly, a muffled report was heard, and the entire face of the high mass fell crumbling into the depth below, completely filling up the bottom of that portion of the quarry. The entire amount thus displaced was estimated by several engineers present from 25,000 to 30,000 tons, and the disintegration is so complete that it is stated it will obviate any necessity for further blasting for the next six months. A large number of guests afterwards sat down to a luncheon provided by Mr. Lester in a tent near the quarry. The toasts were of an informal character, but Mr. Brough, in replying to that of the health of Messrs. Curtis and Harvey, declared the idea of the experiments having been undertaken as an advertisement. The powder, he said, was only of a stronger and better kind than had yet been made, and the experiments were intended to show that gunpowder, if properly made, could develop a power amply sufficient for all purposes to which it was usual to apply it.

#### REPORT FROM LANCASHIRE AND CHESHIRE.

Oct. 15.—The great event of the week in connection with the strike at the West Lancashire collieries has transpired at Birmingham at the Conference of the Amalgamated Association of Miners. The delegates there assembled having complimented Messrs. Halliday and Pickard on the course they had taken in dealing with the strike, and the Conference having also passed a resolution, which amounted to a severe vote of censure on the men in the Wigan and St. Helen's districts, the representatives of those districts were withdrawn from the Conference by order of their respective committees. The Wigan district founded the Amalgamated Association. The Lancashire miners provided the funds whereby its agents were enabled to promulgate its doctrines throughout the length and breadth of the land. Its leaders are Lancashire men. At one time nearly all Lancashire miners owed fealty to them. The orders of the executive committee were law, and were implicitly obeyed throughout the coal fields of the county. Now a few thousand members constitute the whole strength of the Association in Lancashire. Burnley district was taken up by reason of the strike there; and concerning the Wigan and St. Helen's districts, although no public announcement of their severance from the amalgamation has been made, we have every reason to believe they are now no longer connected with the Association, whose whole strength in the county, therefore, must now be concentrated in the south-eastern district, to which Mr. Halliday himself belongs.

Leaving for the moment the question in dispute between the Association and the Lancashire men, it will be interesting to enquire how far their purposes have been served by the Association, which has hitherto had their hearty support. The scheme of the amalgamation was a bold one. There had been many associations of miners in the kingdom. The one presided over by Mr. Macdonald claimed to be a "National" institution, and at one time had in its membership nearly every important mining district in the United Kingdom. But it was contended that it was not sufficiently comprehensive, and that in one most important respect it failed as a trades union, inasmuch as it had no machinery for dealing by means of a central authority with the wages question in the several districts. This defect the Amalgamated Association was to remedy. Under its wings were to be gathered miners of every locality, each district was to be represented at half-yearly conferences, and in the periods between the conferences an executive committee was to sit without whose authority no district should strike. When its authority was obtained levies were to be imposed on the other districts, the men on strike were to be supported, and the balance of the rate of wages was thus to be maintained.

In theory the scheme was excellent; in practice has it succeeded? The great South Wales strike was the first struggle in which it had to contend; in that fight the levies were maintained wonderfully well; all the districts contributed readily, and a marvellously large sum of money was raised. Brisk trade followed, and, save in one or two instances, the association had no strikes on its hands. Thus it did its work well, and at a very cheap rate, bringing to bear upon the employers in the various districts very great pressure, and, no doubt, obtained for its members in some instances material advantages. At this time the levies to the strikes fund were low, and the men were willing contributors of the small payments required of them. But bad trade came, strikes became frequent, and it was soon evident to the members that the district to be supported was not necessarily the one with the most righteous cause, but the one that struck first. With one great strike on hand the association was helpless in the other districts, and it was unreasonable to expect that the men would continue to support their neighbours when, at the same time, they were themselves called upon to submit to reductions. They grew restive; they have grown unmanageable: the Wigan men have struck without the sanction of the executive committee, and by the time this letter reaches your readers may confidently be assumed to have withdrawn from the association, whose strength is not now 50,000, while six months ago it was over 100,000.

No doubt the friends of the association will say that it has not more failed than have many other trades unions, which have all rise again. So it may, but until Mr. Halliday and Mr. Pickard can transform their men into angels, who shall not envy each other's prosperity, who shall diligently pay their levies, who shall work when they are told to work, who shall strike when they are ordered to strike, who being Welsh miners shall have a great affection for English, and being English shall have a great affection for Welsh, the principles of the Amalgamated Association can not be carried out.



## HOLIDAYS AND TRADE RULES AT COLLIERIES AND IRONWORKS.

The time has come for seriously considering what shall be done upon the subject of holidays in collieries and ironworks, and in workshops—indeed for the working classes generally. The employer of labour suffers a diminution of production from short time; and he complains, and justly complains, that notwithstanding this, production is further diminished by the disposition to keep holiday on the Monday, to keep it at the races, at the fair—in short, at every local festival which may happen in the course of the year; and all this in addition to the recognised holidays of Christmas, Easter, and Whitsuntide. We do not say that the men are entirely to blame, for the fact of this taking holiday whenever they please has become systematic. There is another very important side to the question. When from any cause it has answered the master's purpose to give the men a holiday, either because he has been short of materials—it may be of fuel—or, what is worse, when he has been short of orders, he has been in the habit of giving that holiday. Now, according to law, a man cannot take, nor can a master give, a holiday. There is a natural reciprocal obligation on the part of employer and employed—on the part of the first to find his man work during the regular working hours of every working day in the week; and on the part of the man to render honest service throughout those hours—it may be nine, or it may be eight, or any other number of hours per day. It is quite different in the case of a holiday for the local "races," "wakes," and "fairs," of which we read so much. These are not so general as to become by implication of law part of the trade bargain; and races or no races, wake or no wake, fair or no fair, if a man goes to work the master must pay him his wages whether he find him employment or not.

So far as the question of wakes, fairs, and ordinary local idlings are concerned, the question is simple enough, notwithstanding that it causes very great irritation to the master when trade is good, and to the steady workman when trade is bad. In the collieries in some districts this irregularity of work has grown to be such an abuse that for their own security employers are obliged to engage men in excess of the number that would be otherwise requisite to carry on the pit. If five men are under these circumstances hired for four stalls, then it is clear that if all five should present themselves at once one of them must be without work; and where the butty system prevails it is not likely that a cousin or a brother-in-law will be the one rejected. Although this bad system has gone on for years, and has been occasionally commented upon in these columns, the blot has never palpably hit until last Whitsuntide, when a notice was stuck up at one of the ironworks in the North of England on the Thursday before the Whit week to say that unless a majority of the men intimated on the Friday that they were willing to work at Whitsuntide the works would be closed during the Whit week. The men who offered themselves to work on Whitsuntide and during the week laid a plaint in the County Court against their masters to recover their full wages; and Mr. TURNER, the County Court judge of the North of England iron district, who is a very accomplished lawyer, and a son of the late Vice-Chancellor TURNER, decided, and no doubt properly decided, that the men were entitled to recover their money. This made, as might be expected, great confusion in the whole North of England iron trade, and it forced upon both masters and men the consideration of Trade Rules. They had often been advised to adopt this system of rules. As early nearly as the first establishment of the arbitration board Mr. RUPERT KETTLE urged upon them to have trade rules, so that there should be no muddling of rights, and that steady men should not suffer for the idlers, whilst masters, on their part, should know what quantity of fuel and raw materials they had to prepare, and what men they might depend upon to go to work.

However, the system was not then unendurable—the blot had not been hit—but when Mr. Judge TURNER's verdict was given the men were not unwilling to take advantage of it when it told against themselves by bringing actions in the County Court. When it told against the masters, the masters, on the contrary, were not willing to bring men up under the Masters and Servants Act, and thereby deprive themselves of the services of a valuable man who refused to pay the fine, but rather submitted to—well, so far as the master was concerned—being withdrawn from his work for 14 or 21 days. The Darlington Iron Company's men were divided in opinion; some were for working at Whitsuntide, and some for not working, and the notice was posted that the works would be closed during the Whitsuntide week. And those who were willing to work, instead of going to tender themselves to work, went on the Monday and demanded their wages, and to be discharged, as being refused work—in other words, dismissed without their customary fortnight's notice. Their money was not paid on the Monday, and on the Wednesday another demand was made that the Darlington Company should pay them and let them go, which the Darlington Company did. Upon this numerous actions—perhaps 40—were brought for damages by breach of contract against the company in not giving the 14 days' notice.

In doing this the men overlooked another important principle quite as clear as that upon which Mr. Judge TURNER decided. It was that when a contract is broken it is open to both parties to settle the matter of the breach of contract by payment in satisfaction of what is due up to that time, and mutually rescind the contract. If this were otherwise, then no wages settlement would, in fact, be a settlement in point of law, but as long as the Statute of Limitation recognises six years the man would have a remedy to recover for all his lost time upon his discharge from whatever cause. This, of course, is broadly unreasonable, but, no doubt, it was, more or less, in the minds of the men when Mr. TURNER's judgment included a liability on the part of the masters to pay the men for loss of time in any number of back reckonings—a very sad state of things, and one which presses upon both parties the necessity of having Trade Rules.

The settlement of trade rules was the main business which recently took Mr. RUPERT KETTLE down to the Arbitration Board. It appears they had agreed upon every other rule except the one that provided for this troublesome matter, and one to which we do not purpose to refer this week. Before going into the question of rules, Mr. KETTLE had to determine what was to be done in the pending dispute at the Darlington Ironworks. The men had agreed to withdraw the summonses, and refer to Mr. KETTLE as to what should be done. There was no difficulty about this. He had to point out to them the simple provision of the law, which informed them that when they took their money on the Wednesday it meant payment and satisfaction under the contract, and that they had no further claim legally. We cannot see that they had any claim morally, for they had a tacit understanding as to holidays, including Whitsuntide. Of course, Mr. Judge TURNER would not recognise this tacit understanding; it was not sufficient in law to enable him to abrogate the great fundamental principle that the law jealously guards the man's labour, and that when he hires himself he subjects himself to pains and penalties—really pains if he does not work. In return for this there is the legal and moral obligation on the part of the master to find him work. We assert, therefore, that the men had no claim morally. As to the rules, the framing of them has been left to Mr. KETTLE entirely and unconditionally, and we are sure that that gentleman will bring to bear upon them both his legal knowledge and likewise his experience in the framing of rules for the regulation of the building trades, which adjust their difficulties by his system of arbitration, and that their practical character will be increased by his intimate knowledge of the iron industry. Too much importance cannot be attached to, too much trouble cannot be given to, the work, because if a good code of rules can be established in the North of England the same code, with certain variations, may be taken, *mutatis mutandis*, as precedents for other ironmaking districts. We trust that Mr. RUPERT KETTLE, when he has brought the rules into a tangible form, will allow both masters and men the most ample opportunity to think them out practically, and see what would be the effect of every letter therein; and that he will listen to every suggestion offered in good faith, with the intention of making the rules more workable, and free from even the possibility of misapprehension on either side. When he has done this he will have done a great work for both masters and men.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the PERRAN CONSOLS MINING COMPANY.**—ALL CREDITORS or CLAIMANTS of the ABOVE-NAMED COMPANY who have not received notice from the Official Liquidator thereof that their claims have been already admitted, are hereby REQUIRED to COME IN and PROVE their several DEBTS or CLAIMS at the Registrar's Office, Truro, on Monday, the 28th day of October instant, at Eleven o'clock in the forenoon, or in default thereof they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such proof. And for the purpose of such proof they are either to attend in person, or by their solicitors or competent agents, or (unless such attendance be required by the Registrar's summons, or by the Official Liquidator's notice) they are to file affidavits of their several debts or claims at the Registrar's Office of the Court at Truro, such affidavits being sworn either before some Commissioner of the said Court, or before any Commissioner of the Superior Courts lawfully authorised to take and receive affidavits and affirmations.

FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, the 14th day of October, 1874.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the PERRAN CONSOLS TIN MINING COMPANY (LIMITED).**—ALL CREDITORS or CLAIMANTS of the ABOVE-NAMED COMPANY who have not received notice from the Official Liquidator thereof that their claims have been already admitted, are hereby REQUIRED to COME IN and PROVE their several DEBTS or CLAIMS at the Registrar's Office, Truro, on Monday, the 28th day of October instant, at Twelve o'clock at noon, or in default thereof they will be EXCLUDED from the BENEFIT of any DISTRIBUTION made before such proof. And for the purpose of such proof they are either to attend in person, or by their solicitors or competent agents, or (unless such attendance be required by the Registrar's summons or by the Official Liquidator's notice) they are to file affidavits of their several debts or claims at the Registrar's Office of the Court at Truro, such affidavits being sworn either before some Commissioner of the said Court, or before any Commissioner of the Superior Courts lawfully authorised to take and receive affidavits and affirmations.

FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, the 14th day of October, 1874.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the PERRAN CONSOLS TIN MINING COMPANY (LIMITED).**—TENDERS will be received by the Official Liquidator of the said company, addressed to him at the Stannaries Court Office, in Truro, until the 24th day of October instant, stating the HIGHEST PRICE which will be given for the INTEREST of the said company in the LEASE under which its mining operations have been carried on at the Perran Consols Mine, in the parish of Perranraboe, within the said Stannaries; and also for the WHOLE of the MINING PLANT, MACHINERY, MATERIALS, and EFFECTS belonging to the said company at and upon the said mine.

To inspect the above, apply to the Bailiff in charge at the Mine, and for further particulars to the said Official Liquidator as above.

R. M. PAUL, Truro

(Solicitor for the said Official Liquidator). Dated Stannaries Court Office, Truro, October 14, 1874.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the NORTH WHEEL CROFTY MINING COMPANY.**—TENDERS will be received by the Official Liquidator of the said company, addressed to him at the Stannaries Court Office, in Truro, until the 24th day of October instant, stating the HIGHEST PRICE which will be given for ALL the INTEREST of the company in the SETT or SETTS under which its mining operations have been carried on at North Wheel Croft Mine, in the parish of Illogan, within the said Stannaries; and also for the WHOLE of the PLANT, MACHINERY, MATERIALS, and EFFECTS belonging to the said company at and upon the said mine.

To inspect the above, apply to the Bailiff in charge at the Mine, and for further particulars to Mr. JOHN HENRY HAMLEY, the said Official Liquidator.

HODGE, HOCKIN, AND MARRACK, Truro

(Agents for Southgate and Watson, London, Solicitors for the said Official Liquidator). Dated Stannaries Court Office, Truro, October 14th, 1874.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the PERRAN WHEEL VIRGIN MINING COMPANY.**—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Court was, on the 13th day of October instant, presented to the Vice-Warden of the Stannaries by Henry Andrew, of Truro, in the county of Cornwall, gentleman, a contributor of the said company, and that the said petition is directed to be heard before the Vice-Warden, at the Law Institution, Chancery-lane, in London, on Wednesday, the 28th day of October instant, at Two o'clock in the afternoon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, his solicitors, or their agents, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., Secretary of the Vice-Warden, Truro.

Every such contributory or creditor is entitled to a copy of the petition and affidavit, verifying the same from the petitioner, his solicitors, or their agents, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before Monday, the 28th day of October instant, and notice thereof must at the same time be given to the petitioner, his solicitors, or their agents.

CARLYON AND PAULL, Truro, Cornwall

(Solicitors for the said Petitioner). GREGORY, ROWCLIFFES, AND RAWLEY, 1, Bedford-row, London

(Agents of the said Solicitors). Dated Truro, the 15th day of October, 1874.

## In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the LEEDS AND ST. AUBYN MINING COMPANY.**—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Court was, on the 13th day of October instant, presented to the Vice-Warden of the Stannaries by George Bazeley, of Penzance, within the said Stannaries, carrying on business at Penzance aforesaid as a general merchant, under the style or firm of "George Bazeley and Son," a creditor of the said company, and that the said petition is directed to be heard before the Vice-Warden, at the Law Institution, Chancery-lane, London, on Wednesday, the 20th day of October instant, at Two o'clock in the afternoon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, his solicitors, or their agents, of his intention to do so, such notice to be forthwith forwarded to P. P. Smith, Esq., Secretary of the Vice-Warden, Truro.

Every such contributory or creditor is entitled to a copy of the petition and affidavit, verifying the same from the petitioner, his solicitors, or his agents, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 28th day of October instant, and notice thereof must at the same time be given to the petitioner, his solicitors, or their agents.

HODGE, HOCKIN, AND MARRACK, Truro, Cornwall

(Solicitors for the said Petitioner). GREGORY, ROWCLIFFES, AND RAWLEY, 1, Bedford-row, London

(Agents of the said Solicitors). Dated Truro, October 15th, 1874.

TUESDAY, 20th OCTOBER, TWELVE O'CLOCK NOON.

## WEST CARADON MINE SALE.

About Four Miles from Liskeard.

An Omnibus will meet the 9:23 Up and 11:52 Trains.

**MR. BURGESS, of Barncoose, Land and Machinery Valuer, is instructed by the Liquidators of the said Mining Company to SELL, BY PUBLIC AUCTION, on the above date, the following MACHINERY, viz.:**

ONE 30 in. PUMPING ENGINE, stroke 8 in 7 out; ONE BOILER, and fittings, 11 tons.

ONE 24 in. DRAWING ENGINE, 5 ft. stroke, cage and crusher attached; 10 ton BOILER, and fittings.

Five balances and fend-off bobs; 6, 7, 8, 9, and 10 in. pitwork; 8-arm capstan and shears; 150 fms. best iron; 2 1/2 in. round iron flat rods, with faggotted eye-checks and pins; large quantity of 3/4 in. and 1/2 in. chain; pitch pine and other main rods; 5, 5 1/2, and 6 in. strapping plates; staples and glands; 200 pulleys, from 1 to 6 ft.; large long drop scrap screw, flat cut thread; 3 powerful lifting jacks; 3 in. screw, flat cut; about 1 ton of old brass; new and old steel; new and old iron; new and old rope.

Large quantity of sheds and timber, which will be sold on Wednesday, the 21st, unless specially asked for.

Catalogues can be had of W. J. LIVINGTON, Esq., 14A, Austinfrans, London, E.C.; Messrs. SOUTHGATE and WATSON, 7, King's Bench Walk, Temple, London; or of Mr. BURGESS, Barncoose, Redruth. Catalogues contain over 600 Lots.

Dated Barncoose, Redruth, October 6, 1874.

## TO BE SOLD (CHEAP):—

1500 tons NEW IRON and STEEL RAILS, bridge, flange, and double-headed, 30 to 80 lbs. per yard.

180 tons NEW BIRMINGHAM STEEL RAILS, flange 7 1/2 lbs. per yard.

100 tons TITANIC CHARCOAL FIG-IRON.

15 tons NEW GAS or WATER TUBES, 6 in. diameter (wrought-iron).

20 tons OLD WROUGHT-IRON BOILER TUBES.

200 tons NEW SHIPBUILDERS' WROUGHT IRON SCRAP.

110 tons CAST-IRON SCRAP HEAVY LUMPS.

50 tons FENCING WIRE, Nos. 4 and 5.

20 tons HOOP IRON, 1 x 17, W.G.

(The above damaged by water slightly.) For price, &amp;c., apply to—

G. B. HENSHALL, 22, FENWICK STREET, LIVERPOOL.

**THE LIQUIDATOR of an EXTENSIVE MINING PROPERTY in the ISLE OF MAN is PREPARED to RESELL the SAME BY TENDER as a going concern, with immediate possession.**

On the premises are a large WATER-WHEEL, and every appliance for carrying on mining operations on an extensive scale. Many known lodes traverse the sets, which contain about 1800 acres. A shaft has been sunk 50 fms., levels driven, and nearly all the necessary dead work accomplished. The mine has been inspected and favourably reported on by many eminent mining engineers. There is an abundant supply of water-power.

For plans and particulars, apply to Mr. JOHN MEGINN, St. James's Chambers, South King-street, Manchester.

## COLLIERY FOR SALE.

**TO BE SOLD, or LET, on ROYALTY, on favourable terms, a GOOD GOING COLLIERY, in NORTH WALES, producing HOUSE, GAS, and STEAM COALS.** Particulars on application to "W. H. R.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

## TO CAPITALISTS.

**FOR SALE, IN NEW SOUTH WALES, —** 1340 ACRES TIN LANDS, Lode and Stream. 2430 ACRES COPPER LANDS (portions freehold). 2112 ACRES IRON AND COAL. 2250 ACRES COAL (on sea coast). 4000 ACRES COAL (inland, on railway line). 200 ACRES KERORENE SHALE. 200 ACRES PLUMBAGO.

105 ACRES FREEHOLD GOLD DEPOSIT (Brown's Creek). The above properties are all first-class, and on or near railway lines or water carriage, and are the very "pick" of their respective districts (being some of the first selections made).

Liberal terms, either as to purchase or working on royalty, will be given to parties able to carry out arrangements.

Apply to the owner, —

CHARLES W. WEEKES, Circular Quay, Sydney, N.S.W.

**MINING MACHINERY AND MATERIALS FOR SALE,** comprising STEAM ENGINES, WATER WHEELS, PITWORK, and other MINE MATERIAL. — Apply to —

W. TREGAY, REDRUTH.

**CORNISH PUMPING ENGINES FOR SALE, viz.:** — ONE 60 in. CYLINDER, 9 ft. stroke; with ONE BOILER. ONE 40 in. ditto, 9 ft. stroke; with or without BOILER. These engines are in first-class condition.

Apply to JOHN HOCKING and SON, Engineers, Trewirgie-terrace, Redruth, Cornwall.

## CORNISH PUMPING ENGINES.

**FOR SALE, a very good second-hand 50 in. cylinder PUMPING ENGINE, 10 ft. stroke, with TWO CORNISH BOILERS and FITTINGS, 11 tons each; condensing work equal to new.**

Also TWO very good 36 in. cylinder PUMPING ENGINES, with or without BOILERS.

Apply to F. W. MICHELL and Co., East Carn Brea, Redruth, Cornwall.

## PIT SINKING AND WINDING COAL.

**FOR SALE, and ready for immediate delivery, a 14, 18, 25, and 35 horse power PORTABLE STEAM ENGINES, with link motion, reversing gear, winding drum, gear, &c., complete.**

Also, a 9 and 18 horse power VERTICAL ENGINES, with link motion reversing gear, suitable for mining operations.

Also, an excellent PORTABLE STEAM ENGINE; and a 7-ft. PAN MORTAR MILL. — Apply to —

BARROWS AND STEWARTS, ENGINEERS, BANBURY.

**FOR SALE, a HORIZONTAL HIGH-PRESSURE ENGINE, 13 1/2 in. cylinder, 24 in. stroke; HORIZONTAL HIGH-PRESSURE ENGINE, 14 in. cylinder, 30 in. stroke; and a PAIR of GUN-METAL PUMPS, 6 in. diameter, 12 in. stroke; also, a TUBULAR BOILER, up to 66-horse power, of Yorkshire plates throughout.**

Apply to W. T. HENDRY and Co., 2, Wilson-street, London E.C.

## MACHINERY AND MINE MATERIALS.

**FOR SALE, —** A 50 inch Cornish PUMPING ENGINE, new. A 30 inch ditto, with BOILER, nearly new. A 2 1/2 horse power SEMI-PORTABLE ENGINE, on stand plate.

A large quantity of PITWORK and other MINING MATERIAL. Apply to —

W. TREGAY, REDRUTH.

**FOR SALE, one pair of horizontal direct-acting double-action condensing PUMPING ENGINES, cylinders 25 1/2 in. diameter, 36 in. stroke; pumps, 21 1/2 in. diameter, 36 in. stroke; fly-wheel, 14 ft. diameter, about 12 tons; will lift 2500 gallons a minute, 150 ft. high. Have been very little used.**

For further particulars, address Mr. W. P. FRANCE, Priory Lodge, Peckham.

**FOR SALE, a LOCOMOTIVE TANK ENGINE, nearly new, on four 3 ft. wheels coupled, cylinders 11 in. diameter and 16 in. stroke; brass tubes and copper fire-box. Also, 100 to 150 tons secondhand CONTRACTORS' RAILS, from 35 to 40 lbs. per yard; and about SEVENTY CONTRACTORS' THREE-YARD EARTH-TIPPING WAGONS.**

Apply to GEORGE MEAKIN and Co., Contractors, 91, King Henry's-road, London, N.W.

## TO BE SOLD.

**BEAM ENGINE, 16 1/2 inch cylinder, high pressure or condensing in good working trim, with foundation stones, complete.**

**PORTABLE ENGINES, for SINKING, MINING, or GENERAL PURPOSES, from 10 to 30-horse power, IN STOCK, or IN PROGRESS OF CONSTRUCTION.**

Full particulars on application to —

BADGER AND SON, ENGINEERS, ROTHERHAM.

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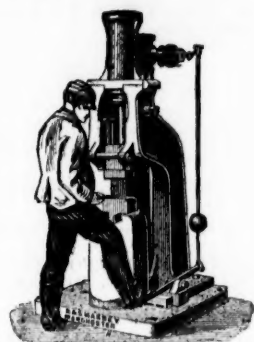
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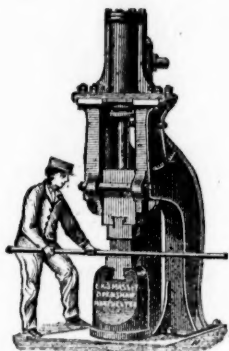
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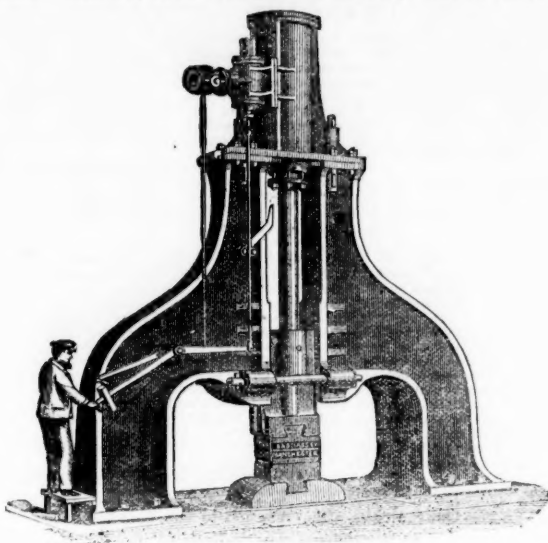
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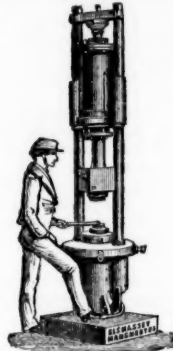
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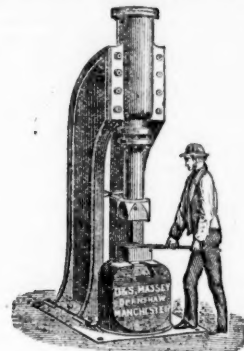
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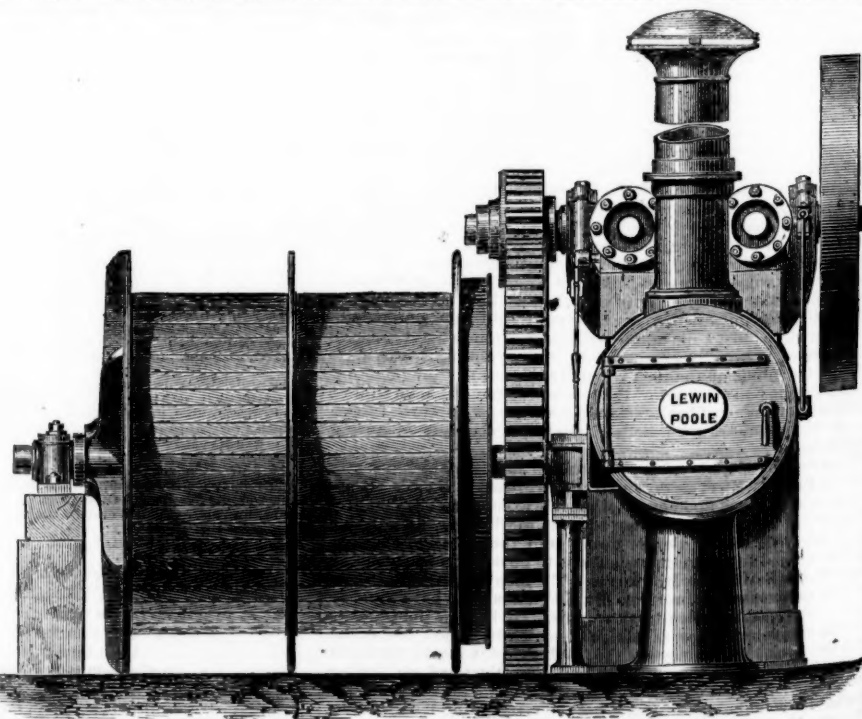
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6144	East Caradon, c, St. Cleer*	2 14 6	—	—	224 10 0	1 0 0	Oct. 1874		
300	East Durren, t, Cardiganshire	32 0 0	9	8 1/2	13 11 3	0 2 6	May 1873		
6400	East Pool, t, c, Illogan*	5 19 0	12	11 1 1/2	20 0 0	0 7 6	July 1874		
1906	East Wheal Loe, t, Wandsworth*	0 9 9	—	—	0 1 0	0 1 0	May 1873		
6000	Emmott, s, t, Christow	0 7 6	—	—	80 15 0	0 10 0	Sept. 1872		
4200	Foxdale, t, Isle of Man*	25 0 0	—	—	0 5 10	0 1 0	Aug. 1874		
10000	Galaxy, c, t, Isle of Man*	4 0 0	12	11 1/2	16 17 0	0 1 0	Aug. 1874		
25000	Great West Van, t, Cardigan*	2 0 0	—	—	15 19 6	0 2 6	June 1872		
6000	Great Wheel Vor, t, c, Helston*	40 15 0	4 1/2	—	1 12 0	0 4 0	Oct. 1874		
6000	Green Hurth, t, Durham*	0 6 6	—	—	0 8 0	0 8 0	July 1874		
20000	Groggion, t, Cardigan*	2 0 0	—	—	62 5 0	0 15 0	Oct. 1872		
1024	Heraford, t, near Liskeard*	8 10 0	3	2 1/2	4 3 0	0 5 0	Dec. 1872		
18000	Hingston Downs, c, Calstock*	12 5 0	1 1/2	1 1/2	0 8 1 1/2	0 0 6	Mar. 1873		
25000	Killalee, t, Tipperary	18 15 0	—	—	584 10 0	1 0 0	July 1874		
400	Lisburne, t, c, Penrhynendrach	10 10 0	1 1/2	1 1/2	0 17 6	0 1 6	Jan. 1874		
5120	Lovell, t, Cardiganshire	10 10 0	1 1/2	1 1/2	0 3 7 0	0 3 7 0	June 1874		
11000	Melindur Valley, t, Cardigan*	3 0 0	2 1/2	3 3/4	63 13 0	0 3 6	July 1872		
9000	Miners Mining Co., t, Wrexham*	5 0 0	15	10 15	0 15 0	0 2 6	June 1874		
20000	Miners Mining Co. of Ireland, c, t, c	7 0 0	—	—	4 13 0	0 12 0	Sept. 1873		
12000	North Hendre, t, Wales	2 10 0	—	—	0 9 0	0 9 0	Sept. 1874		
2000	North Levant, t, c, St. Just*	11 9 6	4 1/2	4 4 1/2	0 0 9	0 0 9	Sept. 1874		
7000	Old Treburgett, s, t, ordinary shares	1 0 0	—	—	0 0 10 1/2	0 10 1/2	Feb. 1874		
0000	Old Treburgett, s, t, 10 p. et. pref.	0 10 0	—	—	0 0 5 0	0 5 0	Nov. 1871		
6094	Pedra-an-drea, t, Redruth*	9 2 0	—	—	3 7 0	0 2 0	Oct. 1874		
3000	Penhalls, t, St. Agnes	3 0 0	—	—	0 1 0	0 1 0	Nov. 1873		
50000	Penrhyndar, t, c, Gwynnapan*	2 0 0	—	—	39 19 0	0 4 0	Nov. 1872		
6000	Phoenix, t, c, Llanidloes*	4 13 4	4 1/2	5 1/4	1 12 6	0 5 0	Mar. 1872		
1772	Princes Risborough, t, c, Holywell	1 0 0	—	—	0 7 0	0 7 0	July 1874		
18000	Princes Risborough, t, c, Holywell	16 16 7	4 1/2	4 4 1/2	104 12 6	0 10 0	Sept. 1872		
1120	Providence, t, Lelant*	2 0 0	—	—	4 2 0	0 5 0	Aug. 1874		
2000	Queens, s, t, Holywell*	2 0 0	—	—	0 1 0	0 1 0	Feb. 1872		
2000	Roman Gravel, t, Salop*	7 10 0	14 1/2	13 1/2	717 0 0	0 2 0	Oct. 1874		
10000	Shelton, c, t, St. Austell	1 0 0	100	95 100	0 10 0	0 2 6	July 1872		
512	South Caradon, c, St. Cleer	1 5 0	1 1/2	1 1/2	1 0 0	0 1 0	Nov. 1870		
5000	South Caradon, c, t, Illogan*	1 17 0	—	—	1 6 0	0 1 6	Nov. 1870		
6000	South Durren, t, Cardigan	3 0 0	—	—	0 2 0	0 2 0	Oct. 1874		
10000	So. Fr. Patrick, t, c, St. Austell	3 10 0	—	—	0 9 0	0 9 0	Nov. 1871		
6771	St. Just Amalgamated, c*	3 10 0	—	—	3 8 0	0 6 0	Feb. 1873		
12000	Tankerville, t, Salop*	6 0 0	7 1/2	7 1/2	47 8 0	0 5 0	Aug. 1874		
6000	Tinocott, c, t, Illogan*	9 0 0	31	30 32	0 1 0	0 1 0	Mar. 1874		
15000	Trevellick, t, Bodmin	2 0 0	—	—	9 11 0	0 10 0	Nov. 1872		
4000	Trumpet Consols, t, Helston*	7 0 0	—	—	13 0 0	0 10 0	Oct. 1874		
15000	Van, t, Llanidloes*	4 5 0	24	22 24	52 10 0	0 5 0	June 1873		
3800	W. Chiverton, t, Penrhyndar*	10 0 0	—	—	0 14 0	0 1 0	Aug. 1874		
512	West Tolgus, c, Redruth*	98 0 0	80	75 80	3 12 6	0 5 0	Oct. 1872		
2048	West Wheal Frances, t, Illogan	27 3 9	—	—	638 10 0	0 10 0	Aug. 1872		
512	Wheal Bassett, c, Illogan*	5 2 8	22 1/2	20 22 1/2	11 17 0	0 2 6	Sept. 1874		
4295	Wheal Kitty, t, St. Agnes	15 17 6	—	—	82 2 3	0 10 0	May 1872		
508	Wheal Margaret, t, c, Llanidloes*	5 0 0	—	—	0 1 0	0 1 0	Jan. 1873		
10000	Wheal Mary, t, c, Llanidloes*	76 5 0	75	70 75	522 10 0	0 4 0	Aug. 1872		
80	Wheal Owles, t, c, St. Just*	1 0 0	—	—	0 3 0	0 3 0	Oct. 1874		
12000	Wheal Russell, c, Tavistock	1 0 0	—	—	0 1 6	0 1 6	May 1873		
10000	Wheal Whistler, t, c, Warleggan*	2 10 0	—	—	52 9 0	0 6 0	Mar. 1872		
25000	Wicklow, c, s, t, Wicklow	2 0 0	—	—	—	—	—		

## FOREIGN DIVIDEND MINES.

Shares.	Mines.	Prd.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid		
35500	Alamillos, t, Spain*	2 0 0	1 1/2	1 1/2	1 5 9	0 2 0	Sept. 1874		
30000	Almaden, t, Spain*	1 0 0	—	—	0 4 3	0 1 0	May 1873		
20000	Australian, c, South Australia*	7 7 6	1 1/2	1 1/2	0 11 6	0 3 0	July 1873		
10000	Battle Mountain, c, (2400 part pd.)	5 0 0	—	—	0 10 0	0 10 0	Nov. 1872		
15000	Birdseye Creek, c, California*	4 0 0	2 1/2	2 1/2	0 14 0	0 2 6	June 1873		
0000	Bensberg, t, Germany*	10 0 0	—	—	0 17 6	0 1 0	Oct. 1872		
12320	Burra Burra, c, So. Australia	5 0 0	—	—	17 15 0	0 1 0	Sept. 1874		
20000	Cape Copper Mining, t, So. Africa	7 0 0	—	—	0 6 0	0 6 0	June 1873		
0000	Cedar Creek, c, California*	0 16 6	—	—	0 6 0	0 1 0	July 1869		
15000	Chicago, c, Utah*	10 0 0	—	—	0 16 0	0 1 6	Sept. 1874		
21000	Colorado Terrible, s, t, Colorado*	5 0 0	3 1/2	3 1/2	0 9 6	0 1 6	July 1874		
7612	Don Pedro North del Rey*	0 16 0	—	—	2 5 9	0 2 0	Mar. 1872		
9350	Eberhard and Aurora, s, Nevada*	10 0 0	—	—	1 0 0	0 1 0	July 1873		
2352	El Dorado, c, Nova Scotia*	10 0 0	—	—	3 12 0	0 6 0	Dec. 1872		
0000	Emma, s, t, Utah (25,000 fully pd.)	20 0 0	1 1/2	1 1/2	2 7 3	0 2 6	Mar. 1873		
70000	English and Australian, c, t, B. Aust.	2 10 0	—	—	0 3 0	0 3 0	April 1872		
15000	Ferguson, c, California*	2 0 0	—	—	4 2 0	0 5 0	July 1873		
30000	Flintstaff, s, Utah*	10 0 0	—	—	4 6 10	0 2 6	Sept. 1874		
25000	Fortuna, t, Spain*	2 0 0	—	—	0 2 4	0 4 0	Oct. 1872		
30000	Gold Run, t, Idaho*	1 0 0	—	—	0 2 4	0 6 0	June 1873		
0000	Kapnick, c, California*	1 3 0	—	—	0 14 0	0 2 0	July 1873		
20000	Lead Chance, s, t, Utah*	5 0 0	1 1/2	1 1/2	14 12 0	0 3 4	Sept. 1873		
15000	Linars, t, Spain*	3 0 0	—	—	1 11 6	0 1 6	Mar. 1873		
7837	Lusitania, Portugal* (25 shares)	3 10 0	—	—	0 5 0	0 5 0	July 1872		
15000	Mammoth Copperopolis of Utah, c, t	10 0 0	—	—	0 5 0	0 5 0	July 1872		
6000	Mountain Chief, s, t, Utah*	10 0 0	—	—	6 0 0	0 3 0	July 1873		
18000	Mountain Mining and Ironworks, c, t	30 0 0	21	19 21	15 16 8	0 19 0	June 1874		
10000	Pontgibaud, s, t, France*	1 0 0	—	—	1 8 0	0 1 0	Jan. 1872		
100000	Port Phillip, c, Clunes*	1 0 0	—	—	1 16 6	0 5 0	July 1874		
54000	Richmond Consols, t, Nevada*	8 0 0	6 1/2	6 1/2	15 per cent.	—	May 1874		
120000	Scottish Australian Mining Co. t*	1 0 0	—	—	1 8 0	0 2 0	Dec. 1873		
112500	Sierra Buttes, c, California*	5 0 0	—	—	0 14 2	0 2 0	Nov. 1873		
0000	South American, c, Nevada*	5 0 0	—	—	2 18 0	0 2 0	Sept. 1874		
15000	Sweetwater Creek, c, California*	4 0 0	—	—	0 11 6	0 6 6	May 1874		
20000	Tollima, c, s* (6000 sh. are £5 f. pd.)	4 0 0	—	—	54 0 0	0 2 0	Dec. 1873		
6000	Westphalian, s, t, Prussia*	20 0 0	—	—	1 3 7	0 1 0	Aug. 1874		
15000	Western Andes, s* (8000 £5 f. pd.)	3 10 0	—	—	—	—	—		

## NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Prd.	Last Pr.	Clos. Pr.	Last Call.
30000	Anglo-Australian, <i>g</i> , Victoria*	2 10 0	—	—	Sept. 1872
20000	Australian United, <i>g</i> , Victoria*	2 10 0	1½	1½	Fully pd
3000	Bellavista, <i>s</i> , Peru* (£10 shares)	10 0 0	—	—	Fully pd
30000	Blue Tent, <i>hyd.</i> , California	5 0 0	5½	—	Fully pd
60000	Braganza, <i>g</i> , Brazil*	0 15 0	—	—	Oct. 1870
12000	Camp Floyd, <i>s</i> , Utah*	10 0 0	—	—	Fully pd
35000	Cesena Sulphur Company, Romanga, Italy*	2 0 0	—	¾ ¾	Fully pd
80152	Chontales, <i>g</i> , <i>s</i> , Nicaragua* (and 15,542 of £1 15s.)	5 0 0	—	—	Feb. 1871
6000	Clifton, <i>s</i> , Colorado	10 0 0	—	—	Fully pd
10000	Crescent, <i>g</i> , Plumas, California*	0 17 8	—	—	June 1871
100000	Culaba, <i>g</i> , Minas Geraes, Brazil*	5 0 0	—	—	Fully pd
10000	Douglas, <i>s</i> , Georgetown, Col.	2 0 0	—	—	Fully pd
7500	East Elsieberg Preference* (40,000 ordinary shares)	6 0 0	—	—	Dec. 1871
85000	Excelsior Hydraulic Gold Washing Co., California*	1 0 0	—	—	Fully pd
80000	Excelsior, <i>g</i> , <i>s</i> , California*	2 0 0	—	¾ ¾	Fully pd
50000	Frontino and Bolivia, <i>g</i> , New Granada*	1 0 0	—	—	Fully pd
50000	General Brazilian, <i>g</i> *	1 0 0	—	—	Fully pd
10000	Goetz Tunnel Co., Georgetown, Col.	7 0 0	—	—	Fully pd
40000	Holcombe Valley, <i>g</i> , <i>s</i> , California	1 0 0	1½	¾ 1	July 1871
6000	Hornachos, * <i>s</i> , £10 shares)	9 0 0	—	—	Jan. 1871
20000	Imperial Brazilian, <i>g</i> , Rio de Janeiro, Brazil*	5 0 0	—	—	Fully pd
20000	Independence, <i>g</i> , <i>s</i> , California*	5 0 0	2½	2½ 3	Fully pd
20000	Jacinto, <i>g</i> , <i>s</i> , California*	2 0 0	—	¾ ¾	Fully pd
20000	Javali, <i>g</i> , Nicaragua*	1 10 0	—	—	Fully pd
12000	Lanetosa, * <i>i</i> , <i>s</i> , Viscaya, Spain (£2 shares)	2 0 0	—	—	Jan. 1871
65000	London and California, <i>g</i> *	2 0 0	—	—	Fully pd
75000	Malabar, <i>g</i> , Colombia* (65000 issued)	1 0 0	¾	¾ ¾	Fully pd
4000	Malaga, <i>i</i> , Spain*	10 0 0	—	—	Fully pd
10000	Malpaso, <i>g</i> , Colombia* (10000 pref. shares, 10s. paid)	1 0 0	¾	¾ ¾	Fully pd
12000	Menzenberg, <i>c</i> , Honnef, Germany*	6 5 0	—	—	Allotheim
10000	Montague & Waverly Gold Quartz Crushing Co., * N. Scot.	5 0 0	—	—	Fully pd
6000	Monte Loretto, <i>g</i> , <i>c</i> , Italy*	0 7 6	—	¾	Jan. 1871
15000	New Pacific, <i>g</i> , <i>s</i> , Nevada*	5 0 0	8½	¾ ¾ ¾	Fully pd
60000	New Quebec, <i>c</i> , Venezuela*	1 0 0	—	¾ ¾	Fully pd
20000	New Rosario, <i>s</i> , Mexico*	5 0 0	—	¾ ¾	Fully pd
20000	New Zealand Kapanga, <i>g</i> , Coromandel*	5 0 0	¾	¾ ¾	Fully pd
10000	Newfoundland, * <i>i</i>	10 0 0	—	—	Fully pd
20000	North American, <i>g</i> *	4 0 0	—	—	Fully pd
50000	Panuleillo, <i>c</i> , Chili*	4 0 0	1½	¾ ¾	Fully pd
80000	Pestarena United, <i>g</i> , Italy*	1 0 0	—	¾ ¾	Fully pd
50000	Rica, <i>g</i> , Colombia* (40000 issued)	0 9 0	7½	¾ ¾	Jan. 1871
100000	Rio Tinto, <i>g</i> , <i>c</i> , Huella, Spain	0 19 0	—	¾ ¾	July 1871
100000	Riochando, <i>g</i> , Bolivia* (£10 shares)	10 0 0	—	—	Fully pd
25000	Ruby Consolidated, <i>s</i> , Nevada*	10 0 0	—	—	Fully pd
20000	Rusia, <i>c</i> , Orenburg, and Utah*	2 0 0	2½	2½ 2½	Fully pd
25000	San Pedro, <i>c</i> , Chili*	2 0 0	—	—	Fully pd
20000	Santa Barbara, * <i>g</i> , Brazil	0 7 6	¾	¾ ¾	Mar. 1871
10000	Silver Plume, <i>s</i> , Colorado*	1 0 0	—	—	Fully pd
27500	Snowdrift, <i>s</i> , Colorado*	2 0 0	—	—	Fully pd
253000	St. John del Rey* (£5 stock and its multiples can be dealt in)	—	245	235 245	"Breck"
26000	St. Lawrence, <i>g</i> , California	5 0 0	—	—	Fully pd
25000	Star of Nevada, * (12000 issued)	2 0 0	—	—	Fully pd
80000	Tecoma, <i>s</i> , Utah*	10 0 0	—	¾ ¾	Fully pd
20000	Thornhill Reef, <i>g</i> , Australia*	1 0 0	—	¾ ¾	Fully pd
43174	United Mexican, <i>s</i> , Mexico* (11)	28 7 8	2½	2½ 2½	May 1870
14500	Utah, <i>g</i> , <i>s</i> , Utah	5 0 0	—	¾ ¾	Fully pd
20000	Victoria, <i>g</i> , <i>s</i> , Victoria* (£100 sh. 10s. pd.)	1 0 0	—	¾ ¾	Fully pd
15000	York Peninsula, <i>g</i> , South Australia	1 0 0	—	¾ ¾	Fully pd